A STUDY TO EVALUATE THE IMPACT OF INSTRUCTIONAL MODULE ON CORONARY ARTERY DISEASE RISK FACTORS IN ASSESSING KNOWLEDGE AND PERCEPTION AMONG ADULTS AT SELECTED VILLAGES IN MADURAI

BY

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A dissertation submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai,

In partial fulfilment of the requirements for the degree of Master of Science in

Medical Surgical Nursing

UNDER THE GUIDANCE OF

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CERTIFICATE

This is to certify that the dissertation entitled **"A study to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai"** is a bonafide work done by **AJITHA .E,** C.S.I. Jeyaraj Annapackiam College of Nursing and Allied Health Sciences, Madurai, submitted in partial fulfilment for the degree e of Master of Science in Nursing.

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CERTIFICATE BY THE EXAMINERS

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"The Lord has done great things for us, and we are glad"

\- ***Bible***

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ABSTRACT

INTRODUCTION

Coronary artery disease is the single largest killer of both men and women worldwide. Coronary artery disease (ischemic heart disease) has been defined as "impairment of heart function due to inadequate blood flow to the heart compared to its needs, caused by obstructive changes in the coronary circulation to the heart." There is an estimated 4.5 million patients of coronary artery disease in India.

MATRIAL AND METHODS

The research design adopted for the study was quasi experimental design. The study was conducted at selected villages at Madurai. The samples selected were 60 of which 30 samples were allotted in the experimental group and remaining 30 were in the control group. The sample were recognized based on the inclusion criteria and selected by convenient sampling technique. Self-administered questionnaire on knowledge and perception statements based on 3 point likert scale was used as a tool for data collection after confirming validity and reliability. Instructional module was given to the experimental group only. The data obtained were analyzed and interpreted using descriptive and inferential statistics.

RESULTS:

The scores of the instructional module were compared within the groups by un paried 't test. The findings revealed the value of knowledge and perception of adults with control group were 1.16 ($p<0.001$) and 1.56($p<0.001$). The obtained "t" test value of

knowledge and perception of adults within experimental group was 28.57($p<0.001$) and 23.34 ($p<0.001$). Thus, it infers that the experimental group and a higher score compared to the control group. The scores of the instructional module were compared between the two groups by independent't' test. The independent't' test value for comparison of knowledge and perception between control and experimental group was 23.6 ($p<0.001$) and 23.8 ($p=<0.001$). This is said to be significant.

DISCUSSION

In this study the knowledge and perception of adults regarding coronary artery disease risk factors were assess and it shows that the knowledge and perception of adults were inadequate. Instructional module was used as a means of imparting knowledge and developing good perception among the adults. The study findings revealed that instructional module was effective in improving the knowledge and developing the perception among the adults.

The post-test level of knowledge in the control group revealed most of the adults had inadequate knowledge 27(90%), 3(10%) moderate knowledge and none of them had adequate knowledge. In the experimental group, 28 (93.3%) had inadequate knowledge and 2(6.66%) had moderate knowledge and none of them had adequate knowledge in the pre-test whereas in the post-test, majority 26(86.66%) of the subjects had adequate knowledge, 4 (13%) had moderately adequate knowledge and none of them had inadequate knowledge. Hence, it is clearly seen that the knowledge has improved to 100% in the experimental group after implementing instructional module. Regarding pre-test level of perception in the control group revealed majority of the subjects had

moderate values 10(33.33%), 20(66.6%) had low values and none of the adults had high value. post-test level of perception in the control group revealed majority of the subjects had moderate values 6 (20%), 24 (80%) had low values and none of the adults had high value. In the experimental group18 (60%) had low values, 12(40%) had moderate values and had high value and none of the adult. After the, instructional module on coronary artery disease risk factors post-test shows that highest percentage 30 (100%) of the subjects had high value. The scores of the instructional module were compared between the two groups by independent't' test. The independent't' test value for comparison of knowledge and perception between control and experimental group was 23.6 ($p<0.001$) and 23.8 ($p=<0.001$). This is said to be significant.

Through which the patient's knowledge level is increased after the instructional module, this reflects the adults's motivational factor and also the eagerness towards the instructional module.

CONCLUSION

The study results revealed that**,** there is significant difference on the instructional module on coronary artery risk factors in control and experimental group. The study concluded that the implementation of instructional module on coronary artery risk factors will increase knowledge and perception of adults.

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CHAPTER 1

INTRODUCTION

"Education is the most powerful weapon which can be used to change the world"

Nelson Mandela

BACKGROUND OF THE STUDY

Achieving and maintaining health is an on going process, shaped by both the evolution of health care knowledge and practices, as well as personal strategies and organised interventions for staying healthy. Health is maintained and improved not only through the advancement and application of health sciences, but also through the efforts and intelligent lifestyle choice of the individual and society. A healthy lifestyle can help prevent diseases and help keep it from progressing. Health professional says that smoking, high blood pressure, and high cholesterol due to unhealthy dietary practices form the risk factors for heart diseases like coronary artery disease.

Coronary artery disease is the single largest killer of both men and women worldwide. Coronary artery disease (Ischemic heart disease) has been defined as "impairment of heart function due to inadequate blood flow to the heart compared to its needs, caused by obstructive changes in the coronary circulation to the heart. "There is an estimated 4.5 million patients of coronary artery disease in India.

The risk factors are characteristics or conditions that are statistically associated with high incidence of disease. Many risk factors have been associated with coronary artery diseases which are mainly of modifiable risk factors and non modifiable risk factors. Modifiable risk factor includes smoking, hypertension, elevated serum

cholesterol level, physical inactivity, obesity and diabetes. Non modifiable risk factors include age, gender and family history.

Atherosclerotic changes begin in the early ages and progress to great extent during young adults. Physical inactivity, unhealthy habits, eating fast foods, unhealthy competition and stress make today's young adults vulnerable to coronary artery disease. WHO in its study has recommended teaching school children about risk factors of coronary artery disease and introduction of early lifestyle modification in school curriculum by identifying risk factors among young adults. The necessary modification in lifestyle can be introduced early. Coronary artery disease is associated with the habit and lifestyle of people. Any attempt to establish a healthy lifestyle in the population can bring about a reduction in the morbidity and mortality rate due to coronary artery disease.

Global level cardio vascular diseases are the number one cause of death globally. More people die annually from cardiovascular diseases than from any other cause. An estimated 17.5 million people died from cardiovascular diseases in 2012, representing 31% of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease. Over three quarters of cardiovascular diseases deaths take place in low and middle income countries. Out of the million deaths under the age of 70 due to non communicable diseases, 82% are in low and middle income countries and 37% are caused by cardiovascular diseases. Most cardio vascular diseases can be prevented by addressing behavioral risk factors such as tobacco use, unhealthy diet, and obesity, physical inactivity and harmful use of alcohol using wide strategies.

Indians have the highest rates of CAD all over the world. It is 2-4 times higher at all ages and 5-10 times higher in those below 40 years of age. The excess burden of CAD in Indians is due to combination of nature and culture. Due to industrialization and changing feature of socio-economic scenario, the incidences of CAD are rising in the developing countries as well prevalence of CAD in India is 3 to 4 fold higher than in America and Europe.

According to existing knowledge, CAD epidemics are essentially preventable. For example, CAD mortality has fallen one-third to one-half in the last three decades in majority of developed countries. The reasons for the accelerated decline in CAD mortality from 1980-1990 were analysed. They found that 25% of the decline was due to primary prevention, 29% due to secondary prevention and 43% was due to improvements in treatments of patients. This demonstrates that modification of risk factors related to lifestyle in the entire nation, rather than advances in management of few with overt CAD is largely responsible for dramatic decline of CAD mortality in the developed countries. This is a clear proof that the average of CAD is reduced with appropriate measures. An increasing number of Indians, even among the younger age groups are prone to get heart diseases due to their health damaging lifestyle.

Tamil Nadu has among the highest crude mortality rates due to cardiovascular diseases in India, with approximately 360-430 deaths per 100,000 people per year, an approximate 36% prevalence rate. Few studies have been conducted to accurately represent the prevalence and incidence within the state, especially rural areas. One study reported a 24% mortality rate due to cardiovascular disease in rural Tamil Nadu.

In Madurai city, it is estimated that the increased prevalence of risk factors of cardiovascular disease is among well educated and high income sector population.

The death rate due to cardiovascular diseases is estimated to be 25% of all deaths in Madurai city, which might go up to 30-40% in the coming years. It was apprehended that by 2020 Madurai might have the highest incidence of heart disease in the Tamil Nadu state.

Coronary artery disease

Coronary artery disease develops when the major blood vessels that supply your heart with blood, oxygen and nutrients (coronary arteries) become damaged or diseased. Cholesterol containing deposits (plaque) in your arteries and inflammation are usually to blame for coronary artery disease. When plaque builds up, they narrow your coronary arteries, decreasing blood flow to your heart.

Risk factors

Non modifiable risk factors

- Family history
- Increasing age (less than 45 for males and less than 55 for females)
- Gender (more often in men than premenopausal women)

Modifiable risk factors

- High blood cholesterol
- Cigarette smoking
- Tobacco use
- Alcoholism
- Hypertension
- Diabetes mellitus
- Lack of estrogen in women
- Physical inactivity
- Obesity

Signs and symptoms

Pain in the chest behind the upper or middle third of the sternum and may radiate to the neck, jaw, shoulders and inner aspects of the upper arm usually left arm, tightness or choking sensation, numbness in the arms, shortness of breath, pallor, diaphoresis, dizziness, nausea and vomiting

Diagnostic evaluation

History collection, physical examination, ECG, echocardiogram, nuclear scan, cardiac catherization artery angiography

Management

Mediations, angioplasty, cardio pulmonary bypass graft

Prevention

Dietary measures, exercises, promoting cessation of tobacco use and alcohol, managing hypertension, controlling diabetes mellitus, behaviour patterns

NEED FOR THE STUDY

Coronary artery disease is a number one killer in America today. According to the American Heart Association, heart disease is the nation's single leading cause of death for both men and women. Every year approximately 17 million people die from coronary artery disease. Of the deaths attributable to Coronary artery disease, which comprise roughly 29% of all deaths, about 80% occur in low- and middle-income countries, often in people less than 60 years of age. Coronary heart disease burden is projected to rise from around 47 million in 1990 to 82 million in 2020.

According to recent estimates, cases of CAD in India may increase from about 2.9 cores in 2000 to as many as 6.4 cores in 2015, prevalence rates in rural

populations will remain lower than that of urban populations, and will continue to increase. In India, the estimated mortality rate from coronary heart disease in 2010 is 2250,378 and the data suggests an increase of 2946,268 by 2015.

The facts given by WHO reveal the extent of the problem: An estimated 16.7 million or 29.2% of total global deaths results from various forms of cardiovascular diseases many of which are preventable by action on the major primary risk factors such as unhealthy diet, physical inactivity and smoking. Out of the 16.7 million deaths from cardiovascular diseases every year, 7.2 million are due to Coronary Artery Disease and 5.5 million are due to cerebrovascular diseases, and 3.9 million are due to hypertension and other heart conditions. Around 80% all CAD deaths worldwide took place in developing, low and middle income countries. Approximately 86% of global burden is also accounted by the developing countries. By 2015 CAD is estimated to be the leading cause of death in developing countries.

It is estimated by the year 2020; India will have the largest cardiovascular burden in the world. Among Indians, coronary heart diseases tend to occur earlier in life than in any other ethnic group.

Cardiovascular disease in India is expected to rise by 103% in men and 90% in women between 1985 and 2015. It would not be wrong to say that Coronary Artery Disease among Indians occurs earlier in life and that the mortality rates are also high. Cardiologists around the world are supporting these facts.

The incidence of CAD in young adults is increasing mainly due to tobacco consumption, lack of physical activity, sedentary lifestyle and obesity. The report includes history of one or more risk factors mainly smoking (76.8%), obesity (20%),

hypertension (19%), hypercholesterolemia (18.5%), diabetes mellitus (17%) and family history of previous myocardial infarction.

A consistent association between sedentary lifestyle and CAD has been demonstrated in different epidemiological studies explaining the prevalence of CAD in sedentary workers. The risk for cardiovascular diseases increases among bank employees with sedentary lifestyle. The nature of their jobs was mainly writing, typing, ledger keeping, cash payment-receipt and mental activities which are usually classified as sedentary activities.

A cross sectional study was conducted at All India Institute of Medical Sciences, New Delhi, on knowledge of patients regarding the risk factors of Coronary Artery Disease. Only the 41.4% of the participants had a good level of knowledge, whereas 58.6% showing a poor level.80% of the heart attack can be prevented by appropriate management and prevention strategies by reducing coronary risk factors in the population. Thus the investigator felt that to assess the knowledge regarding risk factors of Coronary Artery Disease is an essential aspect of public health care.

From the above findings of literature, the researcher realized the severity of the problem of CAD, and deficiency of knowledge among population. So it is very essential to teach the people to take care of and be responsible for their own health. And also, the researcher has seen many persons with CAD during her clinical experience.

The investigator believes that this study would be a useful contribution for creating awareness to the adults regarding CAD. Nurses play a vital role in educating the people especially adults, in order to prevent the occurrence of CAD.

As prevention is better than cure, many health problems can be prevented at early stage through education. Based on this fact, the researcher felt the need to assess the risk factors and improve the knowledge and perception of CADs among adults in order to prevent consequences/ complications of CAD.

STATEMENT OF THE PROBLEM

A Quasi experimental study to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai 2015.

OBJECTIVES

1. To assess the knowledge and perception on coronary artery disease risk factors before and after instructional module in the control and experimental group.
2. To determine the effectiveness of Instructional module by comparing the pretest and posttest knowledge and perception in the control and experimental group.
3. To determine the effectiveness of Instructional module by comparing the posttest scores between the control and experimental groups.
4. To find out the correlation between knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups.
5. To find out the association between the knowledge and perception among adults and their selected demographic variables in control and experimental group.

HYPOTHESIS

H_1 -There is a significant difference in the pre-test and post-test scores of knowledge and perception among control and experimental group.

H_2 - The mean post-test scores of knowledge and perception is significantly higher than the pretest score of knowledge and perception in the control and experimental group.

H_3– The mean posttest score of knowledge and perception is significantly higher in the adults who were exposed to the instructional module than the adults who were not exposed to the instructional module.

H_4- There is a significant correlation between the knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups.

H_5 - There is a statistically significant association between knowledge and perception scores with selected demographic variables in both control and experimental group.

OPERATIONAL DEFINITION

Knowledge

It refers to the correct verbal or written responses of the adults on coronary artery disease risk factors as measured by structured knowledge questionnaire.

Perception

It refers to the ways of thinking and perceived beliefs on coronary artery disease risk factors as expressed in the form of statements and assessed by 3 point Likert scale.

Instructional module on CAD risk factors

It refers to the structure planned education tool in the form of printed material (instructional module) on CAD risk factors which includes non-modifiable (age, sex, family history) and modifiable (smoking, alcohol, diabetes mellitus, hypertension, sedentary life style, obesity, stress).

Adults

It refers that all males and females of age between 20-60 years at selected villages in Madurai.

ASSUMPTION

It is assumed that:

- The patients will have some basic knowledge on coronary artery disease risk factors.
- Instructional module will improve the knowledge of the Adults.
- Knowledge and perception related to coronary artery disease risk factors vary with selected demographic variables.

DELIMITATIONS

- The study is delimited to knowledge of adults in the selected villages.
- The study is delimited to knowledge and perception aspect only.
- Adults who were non corporative.
- The responses of the participants were elicited through the structured questionnaire.
- The participants constitute a convenience sampling that may limit transferability of results to other populations.

PROJECTED OUTCOME

The findings of the study will help to:

- Identify knowledge and perception on coronary artery disease risk factors among adults.
- Identify the impact of instructional module.
- Improve the knowledge and perception on coronary artery disease risk factors among adults.

CHAPTER II

REVIEW OF LITERATURE

This chapter deals with the review relevant to the present study. It is presented under the following headings.

1. Review related to risk factors of coronary artery disease.
2. Review related to knowledge and perception
3. Review related to effectiveness of instructional module on CAD

REVIEW RELATED TO RISK FACTORS OF CORONARY ARTERY DISEASE

Gayan.J (2014) conducted a study on the association of traditional cardio vascular risk factors with CAD in very elderly people aged > 90 years have a different cardiovascular profile with respect to CAD than patients < 90 years who received a cardiac catherization were collected from hospital charts from the department of internal medicine, Saarland University Medical center Germany. The cardio vascular risk profiles were compared in patients aged > 90 years with and without CAD after cardiac catherization. One hundred and six out of 67,976(0.2% mean age 91.6±1.8 years,40 female [3.77%], 95% confidence interval [CL] 0.1-0.2) and out of a total of 114 of the very elderly patients, were found to have CAD. From the results of this study the author could establish only a causal relationship between hypertension and CAD in very elderly people [p=0.005]. At best this is just an association with a higher risk of CAD in this age group. Several studies with similar outcomes are needed to establish causality. This study could find no link between CAD and traditional risk factor except for hypertension.

IsangIwot,(2009) conducted a descriptive cross sectional study on comparison of coronary artery risk factor prevalence among off shore and on shore workers in petroleum industry in Nigeri. 231 workers were included (121 on shores and 110 off shores). The data was collected by using an electronic questionnaire to explore life style factors: exercise, diet, and smoking. Anthropometric indices included body mass index, waist circumference and waist to hip ratio. Biochemical tests included lipid profile and fasting blood glucose. On shore workers has increased waist circumference, increased rates of metabolic syndrome, diabetes and hypertension. Conversely the off shore workers had a higher BMI and lower levels of protective HDL. The prevalence of cardiovascular risk factors showed a mixed outcome, with on shore employees being more sedentary, having a higher prevalence of truncal obesity, diabetes and hypertension.

Mark Helfand,(2009) conducted a study on emerging risk factors of coronary heart disease. C- reactive protein (CRP) was the evidenced that changes in CRP level lead to primary prevention of CHD events is inconclusive. The other evaluated risk factors were coronary artery calcium score measured by electron-beam computed tomography, lipoprotein level, homocysteine level leukocyte count, fasting blood glucose, periodontal disease. The availability and validity of the evidence varied considerably across the risk factors in terms of aggregate quality, consistency of findings, and applicability to intermediate- risk persons in the general population. For most risk factors, no studies assessed their usefulness for reclassifying intermediate-risk persons. The study concluded that current evidence does not support the routine use of any of the 9 risk factors for further risk stratification of intermediate- risk persons.

Esteghamati *et al*. (2008) reported that the prevalence of HTN and pre-HTN was high in Iran. They also reported that approximately 25% or 6.6 million Iranians aged 25-64 years had hypertension; additionally 46% or 12 million Iranians aged 25-64 years had prehypertension. The prevalence of high blood pressure in men and women was 15.6% and 18.8% respectively in Iran According to a cross sectional investigation performed in three cities of Iran on participants over 19 years at 2002 for more than 12500 sample population. The prevalence of elevated blood pressure was 0.8% in the study of 6038 (3280 boys 2758 girls) apparently healthy students in Iran in 2007. It was shown that HTN was significantly higher in Iranian patients with confirmed CAD compared to normal population. Findings of a 12 years study from Iran clarified that the age-adjusted incidence rate of hypertension was 22% lower among insulin-treated than non-insulin-treated type 2 diabetes mellitus clinic attenders and it was greater with older age.

Hatmi.Z.N,(2007) conducted a study to "asses the prevalence of coronary artery disease risk factors in Iran population". A descriptive cross sectional survey was conducted involving 3000 healthy adults at 18 years or above who were recruited with cluster random sampling. Result of the study was, the average age was 36.23=/-5 15.26.There was 1381 female (46%) and 1619 male(54%).Out of which 6.3% were diabetes,21.6% were smoker and 15% positive family history. 61% had total cholesterol level >200mg/dl, 32% triglyceride14>200mg/dl, 42.5% LDL.130mg/dl, 5.5% HDL, 35, 13.7% systolic Blood pressure.140 mm Hg,9.1% diastolic blood pressure.90 mm Hg and 87% of them were physically incentives. The study concluded that clinical and para clinical data indicated that Iranian adult population are a high level of coronary artery disease risk factors.

Latheef, SA Subramanyam G.(2007) conducted a cross sectional study regarding prevalence of CAD risk factors in an urban population of Tirupati. A total of 1519 subjects (539 males and 980 females) 20 years of age formed the sample of the study. Demographic (age, sex, occupation, education and income), behavioral (smoking), anthropometric (height, weight, waist and hip circumferences) and physiological (blood pressure) parameters were noted and recorded and biochemical parameters (serum glucose, total cholesterol, triglycerides, HDL cholesterol levels) were assayed. The overall prevalence in the population was 12.63(192 cases). In males it was 6.86% (37 cases) and in females 15.81%(155 cases). The major risk factors in this population were central obesity 1003(66%) [males 320(59.4%) and females 683(41.12%)], low HDL cholesterol 709 (46.67%) [male284 (52.69%) and females 425 (43.36%)], obesity 588 (38.07%) [males187(34.32%) and females 403(41.12%)], high triglyceride levels (>or=150 mg/dl) 444(29.22%)[males127(23.56% and females 278(28.36%)] and hypertension 396 (26.06) [(males 149(27.64%) and females 247(25.20%)]. Association of age, high LDL cholesterol in males and triglycerides in females with CAD shows the importance of these risk factors in this population.

Kelishadi *et al*. (2006) conducted a cross sectional study among 11,966 school students, ages 11-18 years, selected by multi-stage random cluster sampling from 20 provinces in Iran. The prevalence of self-reported cigarette smoking was 14.3%, with a higher prevalence in boys than in girls and in high school than in middle school students. Overall, 42.2% of smokers were daily smoker, and the rest were occasional smoker. The mean age of the first attempt to smoke was 13.2±2.5 years with no significant gender difference but was significantly lower in daily than in occasional smokers. The place of the first attempt to smoke was mostly in friend parties (41.6%)

and traditional teahouses (23.2%) for boys and the family parties (37.1%) and the traditional teahouses (27.4%) for girls. The higher school level and having a tobacco user at home significantly increased the likelihood of smoking in adolescents, with the highest odds ratio found for having a smoker sister in girls, and having a smoker brother in boys.

Jang- horbani et.al (2006) indicated that there is a high prevalence of CAD among the Iranian type 2 patients. In a study of 10,622 consecutive patients undergoing elective coronary artery by pass grafts (CABG) from 2001 to 2005 revealed that over one third of these patients had DM. The result of the study revealed that the patients with left main coronary artery disease were more likely to be male, older and have diabetes mellitus or dyslipidemia in Persian population.

Meenakshi sharma (2005) conducted a study to premature coronary artery disease in Indians and its associated risk factors of particular concern to India is not only the high burden of cardiovascular diseases(CVDs), but also the effects of these diseases on the productive workforce aged 35-65 years. Heart diseases are rising in Asian Indians 5-10 years earlier than in other populations around the world. The mean age for first presentation of acute myocardial infarction in Indians is 53 years. CAD that manifests at a younger age can have devastating consequences for an individual, the family, and society. Prevention of these deaths in young people is a moral responsibility. A strategy involving prevention of CVDs long before their onset will be more cost effective providing interventions at a stage when the disease is well established. The study concluded the researchers world wide consider there is a 20 year window of opportunity to make inroads against the ravages of CVD. The slow momentum of CVD in countries such as India, particularly among the working –age

population, major initiatives are needed to combat CVD, whether promotion of diet and physical activity, generation of awareness among both sexes, or development of guidelines for risk factors and therapeutic and surgical strategies.

Kelishadi *et al*. (2004) performed a cross-sectional study among 1950 students, aged ll-18, selected by multi-stage random sampling from three cities in Iran and finally revealed these findings: The mean values of total-and LDL-C were higher in smokers and their HDL-C was lower than non-smokers. The mean systolic and diastolic blood pressures were higher in smokers than non-smokers. The smokers had higher BMI than non-smokers. The mean food consumption frequency was lower for fruits and vegetables and higher for fat/salty snacks and fast foods in smokers than non-smokers. The study concluded this altered nutritional status might be due to lower educational levels of smokers. However, the exact reason is not clear.

Arnab Ghosh (2001) conducted a study on cardiovascular disease risk factors in Indian population. Hypertension and diabetes are highly prevalent among Indian population, which may explain their high rate of stroke and heart attack in India. The increasing rate of CVD may be explained by high rates of other risk factors including adverse lipid profile. The etiology of cardiovascular diseases is multifactorial and no single factor is an absolute cause. The study concluded the cardiovascular disease risk factors are increasing with a rapid peace in Asian Indian population. Though the prevalence of CVD risk factors is found higher in urban population, it is increasing in the rural population also, which a serious threatening to the nation.

Gupta R(1997) studied on prevalence and determinants of coronary heart disease in a rural population of Rajasthan, India. A physician – administered questionnaire, physical examination and electrocardiogram (ECG) were performed on

3148 adults>or = 20 years of age (1982 males, 1166 females). Fasting blood samples for determination of lipids were obtained from 202 males and 98 females. Prevalence of coronary risk factors – smoking, hypertension, sedentary lifestyle, obesity and hypercholesterolemia were determined. Smoking was present in 51% males and 5% females, hypertension (>or =140/90mmHg) in 24% males and 17% females hypercholesterolemia(>200mg/dl) in 22%, diabetes history in 0.2% and irregular physical activity or sedentary habit in 85%. Smoking, hypertension and sedentary lifestyle have higher prevalence.

REVIEW RELATED TO KNOWLEDGE AND PERCEPTION

Mostafa A.Arafa (2014) conducted a study which estimates the prevalence of coronary heart disease (CHD) risk factors among Ghaza university students, to assess the risk among them using a suitable scoring system and to identify how they perceive their risk of CHD. The mean age was 20.8± 2.07 years; 54% were females. The prevalence of hypertension and DM was 3.6% and 0.4% while it was 2.6% for hypercholesterolemia. The mean level of LDL –C (88mg/dl vs 85.5mg/dl) and HDL-C (52.4mg/dl vs 42.6%mg/dl) were higher among females than among males. Smoking was more prevalence among males than among females (33.1% vs 1.7%) with a total prevalence of 19%. Overweight and obesity were more prevalent among males (30.7% vs 22.5%) and 9.6% vs 5.6%). In contrast to risk perception female students tend to haves more knowledge than males regards to different aspects of CHD. Logistic regression analysis revealed that age and sex were associated significantly by higher level of total perception ($p< 0.05$). The finding suggests that perceived risk was moderate. The study concluded that the female student had more knowledge regarding coronary heart disease than male students, and the risk was moderate for developing coronary heart disease.

Narmatha, R.et.al (2009) conducted a study to assess levels of CHD-related knowledge among South Asians ; assess perception about the preventability of CHD; and identify if there are demographic factors associated with knowledge and perceptions. 81% of respondents had one or more CHD risk factors. Most participants (89%) said they knew little or nothing about CHD. Stress was the most frequently mentioned risk factor (44%). Few mentioned controlling blood pressure (11%), cholesterol (10%), and diabetes (5%) for prevention. 53% said that heart attacks are not preventable.

Aysha, et. al (2005) done a cross sectional study on knowledge of coronary artery disease(CAD) risk factors and coronary intervention among university student in Karachi East. Questionnaires were distributed to 200 adult students of different non-medical universities and colleges. The mean age of students was 20 years ±22 years and 62% were females. Sixty percent students thought that heart diseases are number one cause of death in our population. The study concluded that 25% students graded smoking as the top most risk factor for CAD. Knowledge of fifty percent students was based on personal and family experience of heart disease.

Sinu Philip (2005) conducted a study to assess the knowledge level regarding risk factors contributing to CAD. The study was conducted in preventive cardiology center of corporation hospital in Bangalore among municipal workers. Study findings revealed that over all knowledge score is 28.08%. The analysis showing that the municipal workers are not having adequate knowledge about CAD.

MC Dormott, M.et.al(2003) studied on knowledge and perception regarding cardio vascular disease risk prevention in patient with coronary and peripheral artery disease. In this study they had compared perceptions regarding risk of cardio vascular

events and benefits of cardio vascular disease risk between patient with CAD, patients with peripheral vascular disease and patient with atherosclerosis (no disease). 348 members were included in this study. Study results reported that in all group risk of myocardial infarction, stroke and death were higher for a patient with CAD than the patient PAD.

Kirkland, et.al (2002) has done a descriptive cross sectional study to determine knowledge and awareness of risk factors for cardio vascular disease among Canadians. 4976 peoples 55 to 74 years of age. Knowledge and awareness regarding cardio vascular disease risk factors were determined from the survey question. Result showed that smoking stress was mentioned a major cause of heart disease by the greatest proportions (41% and 44% respectively).

Lesiak et.al(2001) conducted a study to assess the awareness, level of knowledge and perception of cardiovascular disease in adolescent populations, they administered a survey designed to collect data on demographics, beliefs, regarding risk factors, importance, perceived future risks and other knowledge based assessment question about cardio vascular disease, sample was 873 student. A minority (16.6%) of respondent selected cardiac vascular disease as the greatest life time risk. The findings suggest that adolescent lacks in knowledge regarding the risk of cardiovascular disease and do not perceive themselves at risk for cardiovascular disease.

Plach, et.al (1996) studied the effect of a post discharge education class on CAD knowledge and self- reported health promoting behaviors. The study was conducted in mid western community hospital using descriptive, two group post test survey method among 114 patients who had experienced cardiac catheterization, of

which 53 attended a post discharge coronary artery education class and 61 did not attend the class. The tool used for data collection was an interview schedule. The results of the study revealed that's knowledge of CAD and its risk factor was significantly high among the subjects who attended the post- discharge class and they presented with better health promoting behaviors.

REVIEW RELATED TO EFFECTIVENESS OF INSTRUCTIONAL MODULE

Siva Nageswari K.(2009) conducted a study on role of self-instructional module in creating awareness about CAD among urban community adults. 80 samples were included. The mean score of subjects obtained for overall level of knowledge in pre-test was 30.71 and post-test 51.40. So there is significant difference in the knowledge of adults regarding risk factors of CAD before and after administration of instructional module. This indicates that the self- instructional module, which was administered by the investigator to the subjects, was effective, since the subjects had significant improvement in knowledge scores on CAD.

Mary P.A (2008) conducted a study to assess the effectiveness of planned teaching program on prevention of coronary artery disease among older adults in a selected rural community at Mangalore. Convenient sampling technique was used to select 30 samples. Pre-test knowledge assessment revealed that 76% of the subjects had an average knowledge. The total mean percentage of the pretest knowledge score was (60.87%) with mean and SD 18.87 }3.19 and the mean posttest knowledge score was 91.70% with mean }SD 28.43 }1.61 significance of difference between the pretest and posttest knowledge scores was statistically listed using paired 't' test and it was found to be significant ($t=29$, $P<0.05$). It is found that planned teaching programme is very effective in improving the knowledge of older adults.

M Imanipur, H Haghani(2002) conducted a cross sectional study on knowledge and performance of teachers regarding coronary artery disease prevention and its related factor in 590 teachers in 5 educational zones of Tehran were selected by multistage sampling method. Data were collected by a self-completed questionnaire in 2 parts:17 knowledge about precipitating and preventive performance in 3domains including nutrition, exercise and smoking and some effective . Content and test-retest methods were applied to validate and made the questionnaire reliable (r=0.9) respectively Most subjects were women (68.3%) and married (89.5%) with mean age 40.36.Findings showed that the majority subjects (63%) had satisfactory knowledge of coronary artery disease(mean=14.93 }2.60), 74.5% had moderate performance innutrition domain while 63.4% had a weak performance in exercise, 78% had a satisfactory performance in smoking domain. A significant relationship was found between educational level and knowledge as well as gender and preventive performance respectively. Findings showed that in spite of satisfactory knowledge about coronary artery disease their preventive performance in some domains was not desirable.

Wanda K. Jones et.al(2000) studied on awareness, perception and knowledge of heart disease risk and prevention among women in the United States. The sample consisted of one thousand respondents aged 25 years or older (65.8% white, 13% African American, and 12.6% Hispanic). Only 8% of the respondents identified heart diseases as the leading cause of death. Women aged 25 to 44 years indicated they were not well informed about heart disease. Although 90% of the women reported that they would like to discuss heart disease or risk reduction with their physicians.

CONCEPTUAL FRAME WORK

This present study focused on assessing the impact of instructional module on knowledge and perception of coronary artery disease risk factors among adults.

The conceptual frame work of this study was derived from Ludwig von Bertanlanffy (1968) as cited by Christensen.J. Paula and Kenny W. Janet (1995) General systems theory. A system is a set of interrelated parts that come together to do a specific function. Each part is integral component required to make a complete meaningful whole. These parts are input, throughput, output and feedback.

Input is the first component of a system in which information, energy, or matter that enters a system. For a system to work well, input should contribute in achieving the purpose of the system. In this present study the input was pretest that includes demographic data, knowledge and perception on coronary artery disease risk factors among adults, these aspects have some influence on preexisting information.

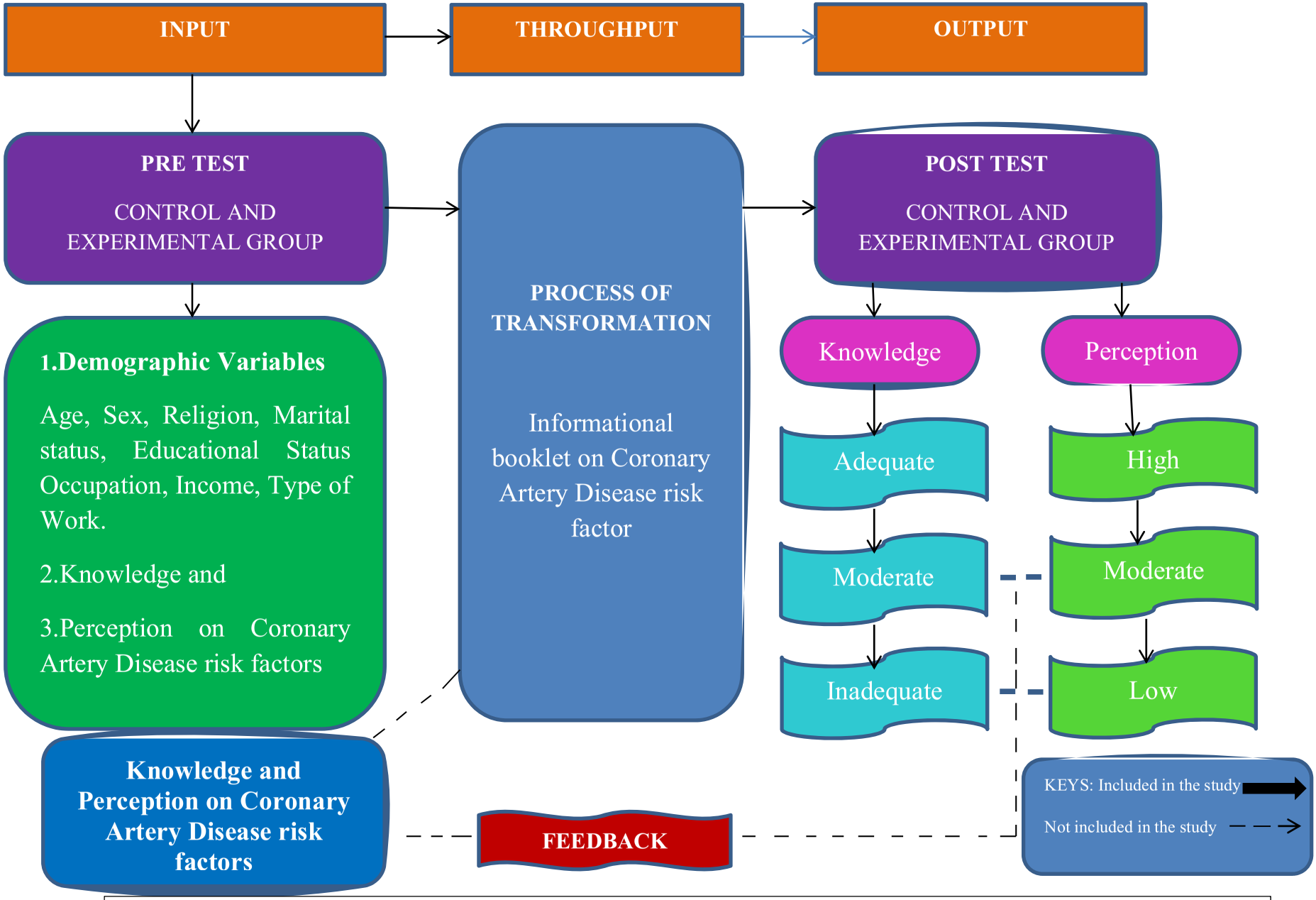
Throughput is the second component in which it allows the input to be changed, so that it is useful to the system. In this study throughput refers to the intervention that is the process of transformation: Information booklet on coronary artery disease risk factors.

Output is the third component of the system. Evaluating the outcome of the study results. In this study the expected outcome was obtained by posttest evaluating the knowledge and perception of coronary artery disease risk factors through structured questionnaire and 3 point likert scale.

Feedback is the final component of the system to determine whether or not the end result of the system has been achieved. Feedback emphasizes the effect of the input, throughput, and output.

This study projects the level of knowledge and perception regarding risk factors of coronary artery disease. The result were obtained through General system theory, in which the results derived were adults who had adequate knowledge were having high level perception,

- Adults who had moderate knowledge were possessing level of distribution in the perception.
- Adults with the inadequate knowledge perceived low level of perception.



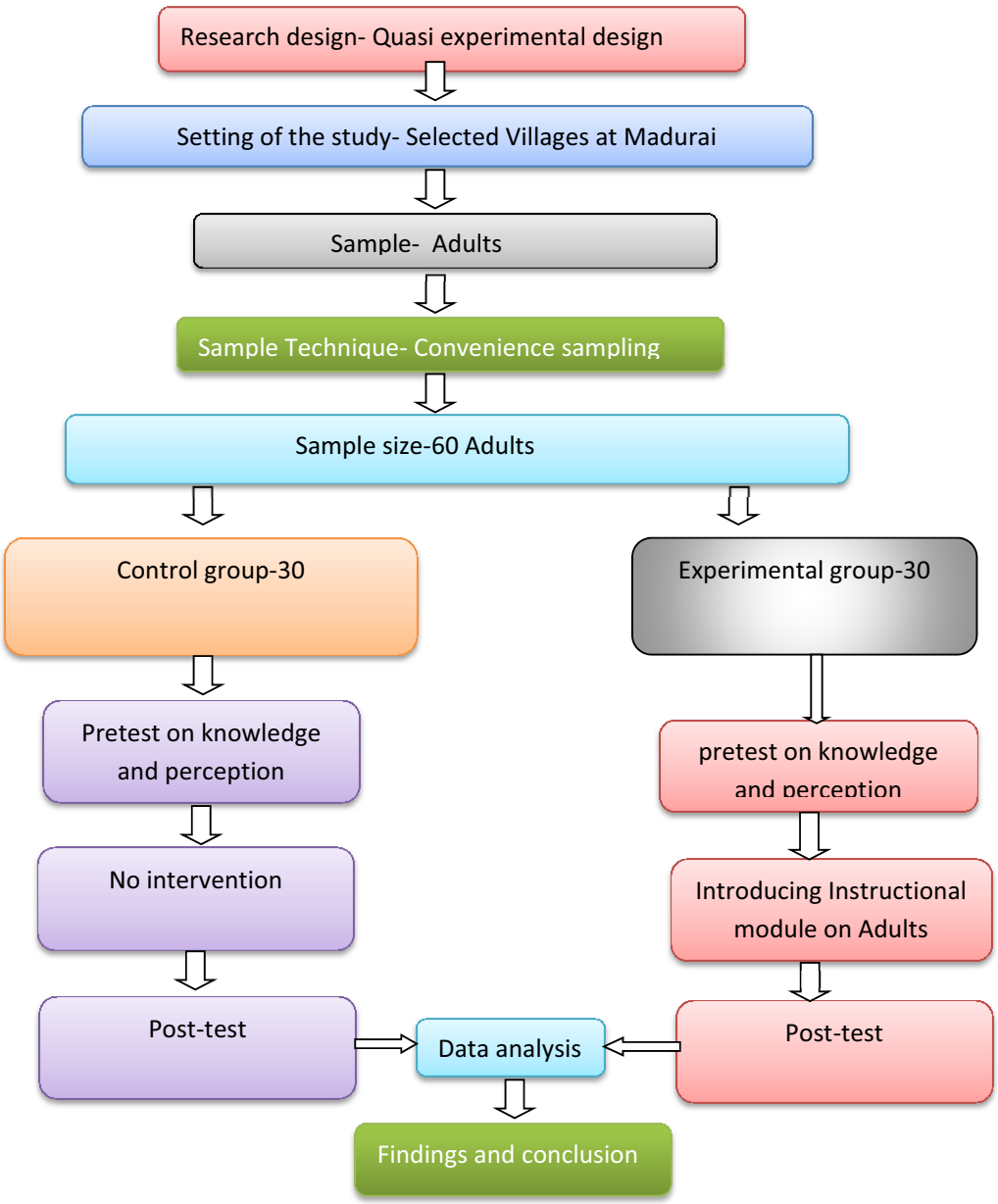
CONCEPTUAL FRAME WORK- GENERAL SYSTEM THEORY MODEL (1968) BY LUDWIG VON BERTANLANFFY

CHAPTER III

MATERIALS AND METHODS

It includes the research approach, research design, setting of the study, population, sample, sample size, method of sampling, criteria for sample selection, development and description of the tool, validity and reliability of tool, procedure for data collection and plan for data analysis, pilot study and ethical consideration.

SCHEMATIC PRESENTATION OF RESEARCH



RESEARCH APPROACH

In order to accomplish the objectives of this study, quantitative approach was adopted to evaluate the impact of Instructional module on coronary artery diseases risk factors in assessing knowledge and perception among adults.

RESEARCH DESIGN

In this study, quasi experimental pre-test post-test control group design was adopted to evaluate the impact of Instructional module on coronary artery diseases risk factors in assessing knowledge and perception among adults. It is assessed by the notations as follows:

Experimental group	O_1	X	O_2
Control group	O_1	-	O_2

O_1- Pre- test knowledge and perception before Instructional module

O_2- Post-test knowledge and perception after Instructional module

X- Intervention (Instructional module on coronary artery disease risk factors.)

VARIABLES

The present study has the following variables

Independent variable- Instructional module on coronary artery disease risk factors.

Dependent variable- knowledge and perception on coronary artery disease risk factors.

SETTINGS OF THE STUDY

The researcher has chosen two Villages in and around Madurai city which include Pasumalai village near Pykara Madurai as the experimental group and kaitharinager near Thirunagar Madurai as the control group for the present study.

Pasumalai village, is taken as the experimental group for the study, which is 1 kilometer away from C.S.I Jeyaraj Annapackiam College of Nursing, Madurai, Tamil Nadu state, South India. The total population of Pasumalai is 5000, including men and women and children above 5 years of age. Pasumalai village is a urban community group which is developing in all the aspects of life. It has all the facilities for healthy social living, The village has adequate water and electricity supply, have proper road and transport facility is adequate.

Kaitharinager village, as the control group for the study, which is 7 kilometers away from C.S.I Jeyaraj Annapackiam College of Nursing Pasumalai, Tamil Nadu State, South India. The total population of kaitharinager is 3500 including men, women and children of above 5 years of age. Kaitharinagar village is a rural community group, it also have basic facilities like market, hospital, transport facility and after socially needed basic facilities. The village is famous for fabric work, has proper road facilities and transport facility is adequate.

POPULATION

Target population-All the adults peoples residing all the villages in Madurai district.

Accessible Population- Adults who were residing in selected villages in Madurai district.

SAMPLE

The samples were the adults who fulfills the inclusion criteria.

SAMPLE SIZE

In this present study, the sample comprised of 60 adults from selected village in Madurai. Who met the inclusion criteria among which 30 adults were included under the experimental group and 30 adults to the control group.

SAMPLING TECHNIQUE

In this study, Convenience sampling technique was used to select the samples.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

- Adult age group between 20-60years.
- Both genders.

Exclusion Criteria

- Adults who were not willing to participate in the study.
- Those who were not available at the data collection time.

DESCRIPTION OF THE TOOL

The tool was developed by the investigator with the guidance of the expert's opinion, various resources and review of literature. The tool used for the present study is a structured questionnaire to assess the knowledge and perception on coronary artery disease risk factors.

The tool comprised of 3 sections:

Section A- Demographic variables

Section B- Structure questionnaire to assess the knowledge

Section C- 3 point likert scale to assess the perception

Section D- Instructional module

SECTION-A

Part-1

In this study, demographic variables include age, sex, religion, marital status, educational status, occupation, income and type of work.

SECTION-B

It consists of 20 structured knowledge questions with multiple choice items. Each question has 4 responses with one right answer on knowledge on coronary artery disease risk factors on the basic of Non modifiable and Modifiable risk factors.

SECTION-C

It consists of 10 perception statements that include the perception of the adults on coronary artery disease risk factors.

SECTION-D

As a means of providing information and improving knowledge regarding coronary artery disease risk factors instructional module was used as an educational tool. It consists of general and specific information about coronary artery disease and preventive measures to avoid cardiac problems.

SCORING PROCEDURE

SECTION-B

The knowledge questionnaire consists of 20 questions and a total aggregate score of 20. Each question has four options with clear instruction to choose the

correct option. Each correct option carries “1” score and wrong carries “0” score. The scores were ranged as follows

Score	Classification
76 100%	Adequate knowledge
51-75%	Moderate knowledge
< 50%	Inadequate knowledge

SECTION-C

It consists of 3 point likert scale with ten statements consisting of 5 negative statements and 5positive statements to assess the perception among adults on CAD. The options included were agree, uncertain, and disagree. The maximum score for measuring the perception is 20. A score of “2” for agree, “0” for uncertain and “1” for disagree. The maximum score was “20” and the minimum score was “10”.

The scores were interpreted as follows

Score	Classification
0-60%	Low perception
61-80%	Moderate perceptions
81-100%	High perception

VALIDITY AND RELIABILITY OF THE TOOL

Validity

The present study was validated by 11 nursing and 2 medical experts. They validated the entire section of the tool and evaluated the tool for its clarity, appropriateness, adequacy, relevance and completeness. Few modifications and suggestions were made as per the recommendations made by the experts. The tool

was refined and finalized after establishing the validity. The tool was translated in Tamil and checked for language validity.

Reliability

- The reliability of the structured questionnaire was elicited by test re-test method using Karl Pearson's correlation coefficient for knowledge was "r"=0.98, which was found to be reliable. After the pilot study the tool was found to be reliable and accepted for the study.
- The reliability of the perception 3 point likert scale on coronary artery diseases risk factors relicited using Cronhach's alpha was "r"=0.78, which was found to be reliable.

PILOT STUDY

The researcher conducted the pilot study in one of the Villages in Madurai. After obtaining administrative approval from the authorities concerned, the researcher selected 6 adults. Oral consent was obtained from each patient. Out of 6 samples, 3 samples in experimental and other 3 samples in the control group were selected for the study. Pretest was carried out for both groups of coronary artery disease risk factors using structured knowledge questionnaire and 3 point likert scale to assess the perception. On the same day after pretest, samples in the experimental group were given Instructional module. Post-test was carried out on the 8^{th} day by using the same knowledge questionnaire and perception was assessed using the 3 point likert scale for both groups. The mean posttest score of knowledge (17±1.26) was higher than the mean pretest score (8±2.46) and mean posttest of perception(17.8±0.98) was higher than the mean pretest score(9.6±0.48) in interventional group, which confirmed that

the conduction of the main study would be feasible. It also provided information regarding reliability, feasibility and practicability of the designed methodology.

METHOD OF DATA COLLECTION

The data was collected among adults who were in villages at the pasumalai and kaitharinagar areas. Written permission was sought and obtained from the authorities concerned. The period of data collection was 6 weeks. 60 patients were selected as per above mentioned criteria with prior informed verbal consent to participate in the study. A brief introduction about the study was given to the samples. Data was collected through structured questionnaire to assess knowledge and 3 point likert scale to assess the perception coronary artery disease risk factors.

The data collection schedule was as follows:

Data collection schedule

Group	Period	Setting	Task
Experimental	6 weeks	Pasumalai villages.	Day 1 Step 1-orientation Step 2- pre-test Step 3- implementation of intervention Day 8 Step 4- post-test
Control		Kaitharinager villages	Day 1 Step 1-orientation Step 2- pre-test Day 8 Step 3- post-test

STEPS OF DATA COLLECTION PROCESS

Step I

- ✶ Self introduction about the researcher to the patients.
- ✶ Explanation about the purpose of the study and oral consent obtained.
- ✶ Good rapport was maintained with the patients.
- ✶ Patients were made comfortable and privacy was provided.

Step II

- ✶ Selection of sample and allotment to experimental group and control group based on the inclusion criteria.

Step III

- ✶ Samples were oriented to the coronary artery disease risk factors.
- ✶ Pretest was done for both experimental and control groups.
- ✶ Instructional module on coronary artery disease risk factors was projected only to the patients in the experimental group.

Step IV

- ✶ Post-test was conducted for both the experimental and control groups using the same tool to the eighth day.
- ✶ After the data collection procedure, instructional module risk factor of coronary artery disease was projected to the control group for ethical consideration.
- ✶ A hearty gratitude was conveyed for the patients for their co-operation and participation.

PLAN FOR DATA ANALYSIS

Data analysis helps the researcher to organize, summarize, evaluate, interpret and communicate the numerical facts. For the present study the collected data from the participants were grouped and analyzed using both descriptive and inferential statistical methods. SPSS 16.0 version was used for data analyses.

Study plan to carry out the following analysis:

- ✓ Gather all responses obtained from the study tool
- ✓ Enter the scores in the spreadsheet
- ✓ Coding the data

Descriptive statistics

Demographic variables were analyzed using frequency distribution, mean and standard deviation.

Inferential statistics

- ✓ Pre and post-test level of knowledge and perception scores within the group was analyzed by using paired "t" test.
- ✓ Post-test levels of knowledge and perception scores between the groups were analyzed using independent "t" test.
- ✓ Pearson correlation coefficient (r) was used to find the relationship between knowledge and perception.
- ✓ Association between demographic variables and pre-test level of knowledge and perception was analyzed using chi-square test.

ETHICAL CONSIDERATION

Beneficence

The right freedom from harm:

- Through this study is an experimental design, the intervention used was non- invasive.

The right protection from exploitation

- Assurance was given to subjects that their participation in the study within no way influence their results.

Respect for human dignity:

The right to self- determination:

- Research proposal was approved by dissertation committee of the college.
- Prior permission was sought from higher authority in concerned village head.
- Before consent is sought the research has given details of the nature and purpose of the research.
- Oral consent was formally obtained prior to completion of the data collection from the participants and the confidentiality of their responses was assured.

The right to full disclosure:

- Participants was advised of the voluntary nature of the study is given the option to withdraw from the study at any stage without being subjected to any penalty.

- Participants were not required to identify themselves by name and have not been identified during data analysis or during discussion of the results and conclusions.
- Full explanation of the purpose of the research was given and the researcher was available to provide information and support as needed.

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the data analysis collected among adults and interpretation of the present study involves compilation, editing, coding, classification and presentation of the data for statistical calculation in order to draw inferences and conclusions. Using descriptive and inferential statistics, the study objectives were computed.

The data collected from the respondents were organized, tabulated, analyzed and included applying descriptive and inferential statistics based on the objectives

1. To assess the knowledge and perception on coronary artery disease risk factors before and after instructional module in the control and experimental group.

2. To determine the effectiveness of Instructional module by comparing the pretest and posttest knowledge and perception in the control and experimental group.

3. To determine the effectiveness of Instructional module by comparing the posttest scores between the control and experimental groups.

4. To find out the correlation between knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups.

5. To find out the association between the knowledge and perception among adults and their selected demographic variables in control and experimental group.

The findings were presented in the form of tables and diagrams under the following series:

Section-A. This section shows the description of the socio demographical variables

1. Frequency and percentage distribution of adults based on their personal variables.
2. Distribution of adults based on their knowledge level in control and experimental groups.
3. Distribution of adults based on their perception level in control and experimental groups

Section- B. Comparison of difference on knowledge and perception among adults in the control and experimental groups

1. Mean score difference of pre-test and post-test on knowledge among adults in the control group.
2. Mean score difference of pretest and posttest on knowledge among adults in the experimental group.
3. Mean score difference in knowledge among adults between the control and experimental group.
4. Mean score difference of pre-test and post-test on perception among adults in the control group.
5. Mean score difference of pre-test and post-test on perception among adults in the experimental group.
6. Mean score difference in perception among adults between the control and experimental group.
7. Paried 't' test on knowledge score among adults with in the control group.
8. Paried 't' test on knowledge score among adults with in the experimental group.
9. Paried 't' test on perception score among adults with in the control group.
10. Paried 't' test on perception score among adults with in the experimental group.

11. Independent ‘t’ test for comparison of knowledge between control and experimental group.
12. Independent ‘t’ test for comparison of perception between control and experimental group.

Section-C. Correlation between knowledge and perception scores of instructional module among adults.

1. Relationship between knowledge and perception scores among adults in the control groups.
2. Relationship between knowledge and perception scores among adults in the experimental groups.

Section- D. Association of knowledge and perception with selected socio demographic variables.

1. Association of knowledge among adults in control group with their selected demographic variables.
2. Association of knowledge among adults in experimental group with their selected demographic variables.
3. Association of perception among adults in control group with their selected demographic variables.
4. Association of perception among adults in experimental group with their selected demographic variables.

SECTION: A

Table: 4.A.1: Frequency and percentage distribution of adults based on their socio-demographic and clinical variables.

(N=60)

S.No	Demographic variables	Control (n=30)		Experimental (n=30)	
		f	%	f	%
1.	**Age in years**				
	20-30	5	17	5	17
	31-40	9	30	9	30
	41-50	11	36	9	30
	51-60	5	16	7	23
2.	**Sex**				
	Male	20	67	16	53
	Female	10	33	14	47
3.	**Religion**				
	Hindu	24	80	17	57
	Christian	6	20	13	43
	Islam	0	0	0	0
	Others	0	0	0	0
4.	**Marital status**				
	Married	27	90	26	87
	Unmarried	3	10	4	13
	Widow	0	0	0	0
	Separated	0	0	0	0
5.	**Educational status**				
	Primary	6	20	7	23
	High school	17	57	15	50
	Under graduate	6	20	5	17
	Post graduate	1	3	3	10
	Uneducated	0	0	0	0

6.	**Occupation**				
	House wife	5	17	4	13
	Coolie	13	43	12	40
	Private employee	9	30	13	44
	Government employee	3	10	1	3
	Retired	0	0	0	0
7.	**Monthly income**				
	Nil	7	23	4	13
	Rs. 3000-5000	6	20	5	17
	Rs. 5000-8000	4	13	7	23
	Rs. 8000-10000	10	34	5	17
	Above 10000	3	10	9	30
8.	**Type of work**				
	Sedentary	7	23	10	33
	Moderate	21	70	20	67
	Heavy worker	2	7	0	0

Table 4.A.1 divulges that among 60 adults, 11(36%) and 9(30%) of adults were between 31-40 and 41-50 years of age group in the control group and experimental group respectively.

Regarding the gender, highest 20(67%) and 16(53%) of adults males in both the control and experimental groups respectively.

With regard to religion, most of the respondents were Hindu 24(80%) and 17 (57%) in control and experimental groups respectively.

With regard to marital status, most of the adults were married 27(90 %) and 26 (87%) in control and experimental groups respectively.

With regard to educational status, 17 (57%) and 15(50%) adults have completed their higher education in the control group and in the experimental group respectively.

With regard to occupation, majority of the adults were 13(43%) in the control group and 13(43%) coolie workers in the experimental group were private employee.

Regarding the income, most of the adults that is earn 10(33%) in the control group were belongs to the income between Rs.8000 and Rs.10000 per month, and 9(30%) in the experimental group belongs to the income of above Rs.10000 per month in the.

With regard to type of work, majority were moderate worker 21(70%) and 20(67%) in control and experimental group respectively.

Fig :4.A.2. Distribution of adults based on their knowledge level in the control and experimental groups. (N=60)

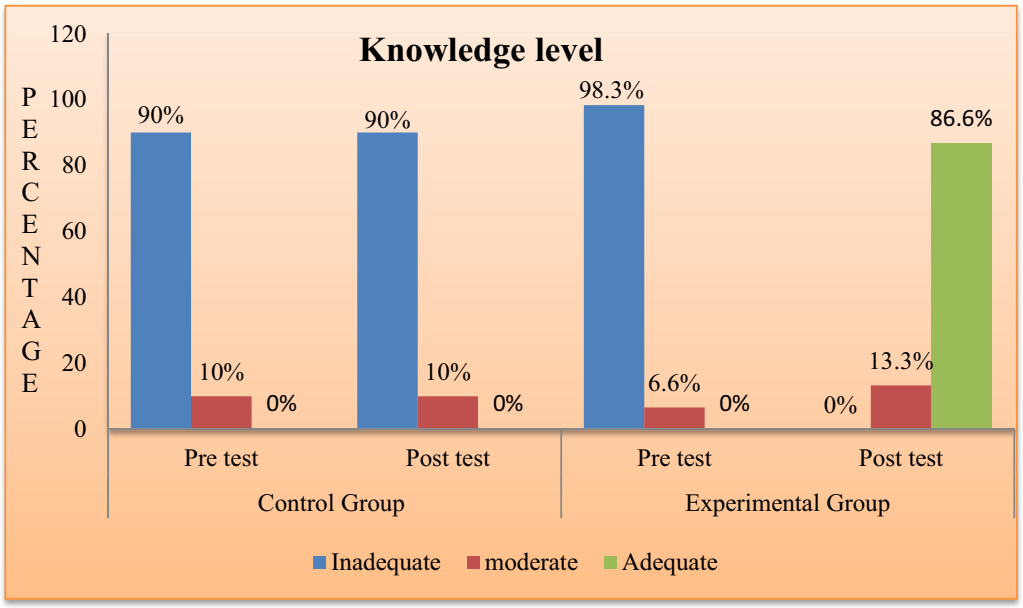


Figure 4.1 signifies the pre-test and post-test knowledge level on coronary artery diseases risk factors among adults in frequency and percentage. In the control group most of the adults had inadequate knowledge 27(90%), in the pretest 27(90%) and in the posttest. 3(10%) adults had moderate knowledge in the pretest where 3(10%) adults had moderate knowledge in the posttest. It was noted that none of them had adequate knowledge in the both control and experimental group.

Similarly, in the experimental group, 26(86.66%) had inadequate knowledge and 2(6.66%) had moderately knowledge and none of them had adequate knowledge in the pretest whereas in the post test majority 28(93.33%) of the adults had adequate knowledge 4(13%) had moderate knowledge and none of them had inadequate knowledge. Hence the research hypothesis (H_1) is accepted in the experimental group.

Fig:4.A.3 Distribution of adult based on their perception level in the control and experimental groups. (N=60)

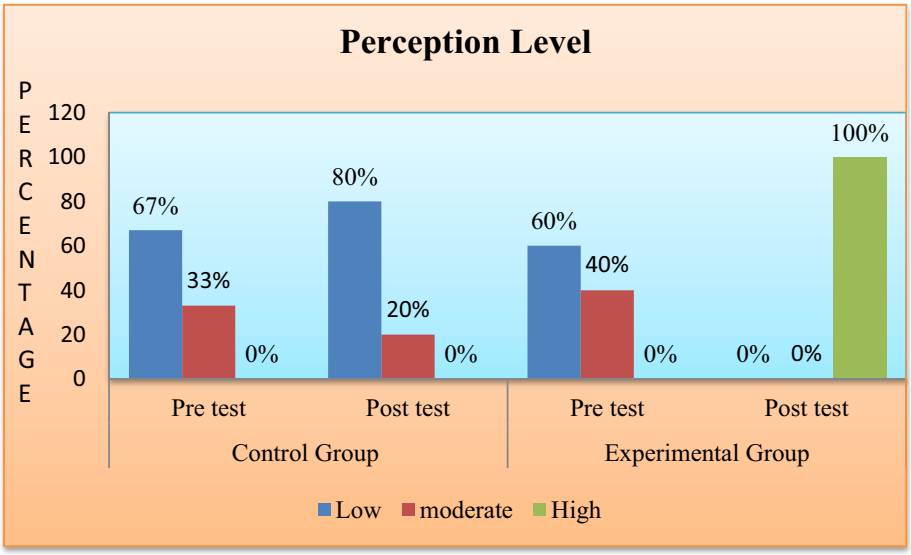


Fig .4.A.2 depicts the pretest and posttest level of perception on coronary artery disease risk factor in frequency and percentage. In the control group the majority of the subjects had low perception 20(66.66%) and 10(33.33%) of them had moderate perception in the pretest and where as in the post test most of the subjects had low perception 24(80%) and 6(20%) had moderate perception and none of them belong to high perception.

Similarly, in the experimental group, 18(60%) had low perception, 12(40%) had moderate perception in the pretest. After the instructional module, the highest percentage 30(100%) of the subjects had high perception in the post test. Hence the research hypothesis (H_1) is accepted in the experimental group.

SECTION: B

Table 4.B.1. Mean score difference of pre-test and post-test on knowledge among adults in the control group. (n=30)

	Knowledge			
Control group	**Mean**	**SD**	**Mean %**	**MD**
Pre-test	8.13	2.167	40.65	
				0.13
Post-test	8.26	1.558	41.3	

Table 4.B.1 elucidates the mean score difference between pre and post-test knowledge in the control group. The finding show that the pre-test mean score was (8.13±2.167) and post-test mean score was (8.36±1.558) with the mean score difference of 0.13.

This shows that there is no difference between the knowledge scores of pre-test and post-test in the control group. Hence, the research hypothesis (H_2) is not accepted in the control group.

Table 4.B.2. Mean score difference of pre-test and post-test on knowledge among adults in the experimental group. (n=30)

Experimental Group	Knowledge			
	Mean	SD	Mean %	MD
Pre-test	6.63	2.08	33.15	10.77
Post-test	17.	1.54	87	

Table 4.B.2 displays the mean score difference of pre-test and post-test on knowledge among adults in the experimental group. The results show that the post-test mean score has increased (17±1.54) than the pre-test mean score (6.63±2.08) with the mean difference of 10.77.

This means that the knowledge of adult has improved after the introduction of instructional module on coronary artery disease risk factor. Hence, the research hypothesis (H_2) is accepted in the experimental group.

Table 4.B.3. Mean score difference in knowledge among adults between the control and experimental groups.

(n=30)

	Knowledge			
Group	**Mean**	**SD**	**Mean %**	**MD**
Control group post-test	8.26	1.558	41.3	
Experimental group post-test	17.	1.54	87	9.14

Table 4.B.3 presents the comparison of the mean score difference between the control group and experimental group in means of knowledge in the post-test. In the experimental group, post-test mean score has increased (17±1.54) than the control group post-test mean score of (8.26±1.554) with the mean score difference of 9.14.

This result signifies that there is difference between the post-test mean score of knowledge in the control group and the post-test mean score of knowledge in the experimental group, which means that the instructional module is effective. Hence, the research hypothesis (H_2) is accepted in the experimental group.

Table 4.B.4. Mean score difference of pre-test and post-test on perception among adults in the control group.

(n=30)

	Perception			
Control group	**Mean**	**SD**	**Mean %**	**MD**
Pre-test	9.8	1.57	49	0.5
Post-test	9.3	1.74	46.5	

Table 4.B.4 indicates the mean score difference of pre-test and post-test on perception among adults in the control group. It shows that the perception mean and SD of control group in the pre-test and post-test is (9.8±1.57) and (9.3±1.74) respectively. The mean score difference in perception is 0.5. The obtained result shows that there is no difference between the perception scores of pre-test and post-test in the control group. Hence, the research hypothesis (H_2) is not accepted in the control group.

Table 4.B.5. Mean score difference of pre-test and post-test on perception among adults in the experimental group. (n=30)

	Perception			
Experimental group	**Mean**	**SD**	Mean **%**	**MD**
Pre-test	9.7	2.50	48.5	8.8
Post-test	18.5	1.22	92.5	

Table 4.B.5 cited above shows the mean score difference of pre-test and post-test perception in the experimental group. The findings explicit post-test mean score has increased (18.5±1.22) than the pre-test mean score (9.7±2.50), with the mean score difference of 8.8.

The result indicates that there is improvement in the post-test mean score in the experimental group after the introduction of the instructional module. Hence, the research hypothesis (H_2) is accepted in the experimental group.

Table 4.B.6. Mean score difference in perception among adults between the control and experimental groups.

(n=30)

	Perception			
Group	**Mean**	**SD**	**Mean %**	**MD**
Control group post-test	9.3	1.74	46.5	9.2
Experimental group post-test	18.5	1.22	92.5	

Table 4.B.6 represents the comparison of the mean score difference between the control group and experimental group post-test perception. The findings show that the post-test mean score of experimental group (18.5±1.22) is greater than the post-test mean score of the control group (9.3±1.74) with the mean score difference of 9.2.

The mean score difference between the control group and experimental group post test indicates that the instructional module was effective in improving the perception level of adults in the experimental group. Hence, the research hypothesis (H_2) is accepted in the experimental group.

Table 4.B.7.Paired‘t’ test on knowledge score among adults patients within the control group (n=30)

Control Group	Level	Mean	SD	‘t’ value	‘p’ value
Pre-test	Knowledge	8.13	2.167	1.162	0.119
Post-test		8.26	1.558		

Table 4.B.7 reveals that the paired ‘t’ test score on knowledge within the control group is 1.162 and P=0.119at p<0.001 level. This indicates that this difference is not significant within the pre-test and post-test score. Hence, the research hypothesis (H_3) is not accepted in the control group.

Table 4.B.8.Paired't' test on knowledge score among adults within the experimental group

(n=30)

Experimental Group	Level	Mean	SD	't' value	'p' value
Pre-test	Knowledge	6.63	2.08	28.57	0.000***
Post-test		17.4	1.54		

***P<0.001

Table 4.B.8 depicts that the paired 't' test score on knowledge within the experimental group is 28.57 and P=0.000 at p<0.001 level, which indicates that this difference is considered to be extremely significant within the pre-test and post-test score. Hence, the research hypothesis (H_3) is accepted in the experimental group.

Table 4.B.9.Paired‘t’ test on perception score among adults within the control group

(n=30)

Control Group	Level	Mean	SD	‘t’ value	‘p’ value
Pre-test	Perception	9.8	1.57	1.56	0.182
Post-test		9.3	1.74		

***P<0.001

Table 4.B.9 depicts that the paired‘t’ test score on perception within the control group is 1.56 and P= 0.182 at p<0.001 level, which indicates that this difference is not significant within the pre-test and post-test score. Hence, the research hypothesis (H_3) is not accepted in the control group.

Table 4.B.10.Paired‘t’ test on perception score among adults within the experimental group

(n=30)

Experimental Group	Level	Mean	SD	‘t’ value	‘p’ value
Pre-test	Perception	9.7	2.50	23.34	0.000***
Post-test		18.5	1.22		

***P<0.001

Table 4.B.10 depicts that the paired‘t’ test score on perception within the experimental group is 23.34 and P=0.000at p<0.001 level, which indicates that this difference is considered to be extremely significant within the pre-test and post-test score. Hence, the research hypothesis (H_3) is accepted in the experimental group.

Table 4.B.11.Independent‘t’ test for comparison of knowledge between control group and experimental group (N=60)

Group	Level	Mean	SD	‘t’ value	‘p’ value
Control group	knowledge	8.26	2.167	23.6	0.000***
Experimental group		17.4	1.54		

***P<0.001

Table 4.B.11 reveals the comparison of knowledge between control group and experimental group. The findings show overall independent ‘t’ test score being 23.6 and P=0.000at p<0.001 level is considered to be extremely significant. Hence, the research hypothesis (H_3) is accepted in the experimental group.

Table 4.B.12.Independent't' test for comparison of perception between control group and experimental group (N=60)

Group	Level	Mean	SD	't' value	'p' value
Control	Perception	9.3	1.74	23.83	0.000***
Experimental		18.5	1.22		

***P<0.001

Table 4.B.12 reveals the comparison of perception between control group and experimental group. The findings show overall independent 't' test score being 23.83 and P=0.000 at p<0.001 level is considered to be extremely significant. Hence, the research hypothesis (H_3) is accepted in the experimental group.

SECTION:C

Figure 4.C.2 Relationship between knowledge and perception of adults in control group

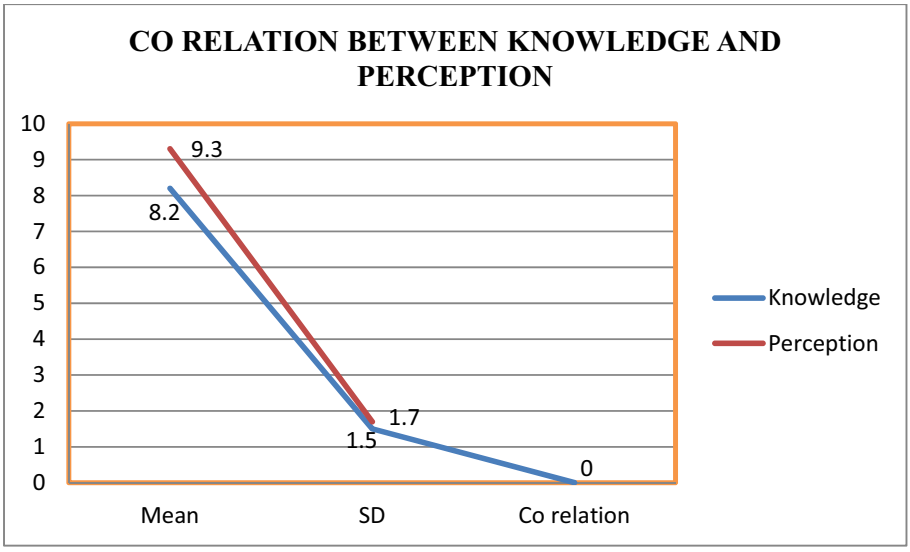


Figure 4.C.2 cited above presents relationship between knowledge and perception. It is inferred that there is a negative correlation between knowledge and perception in the post test score "r" = 0. Hence, the research hypothesis (H_4) is not accepted.

Figure 4.C.1 Relationship between knowledge and perception of adults in experimental group

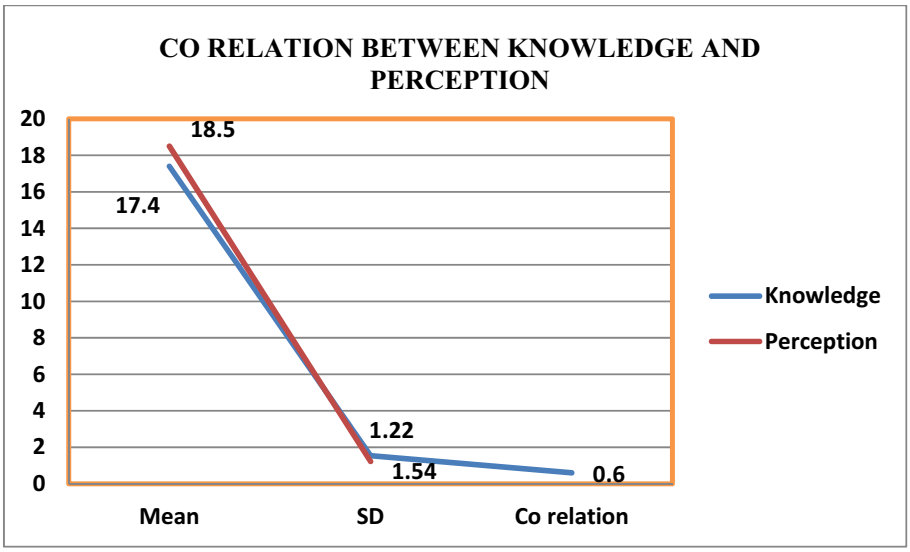


Figure 4.C.1 cited above presents relationship between knowledge and perception. It is inferred that there is a positive correlation between knowledge and perception in the post test score "r" = 0.6. Hence, the research hypothesis (H_4) is accepted

SECTION: D

Table 4.D.1. Association of knowledge with selected demographic variables in control group.

S. No	Socio demographic variable	Inadequate		Moderate		Adequate		Chi square	p-value
		f	%	f	%	f	%		
1.	Age in years								
	a) 20-30	5	17	0	0	0	0		
	b) 31-40	7	23	2	7	0	0	2.214	0.899
	c) 41-50	11	37	1	3	0	0		
	d) 51-60	4	13	0	0	0	0		
2.	Gender								
	a) Male	17	57	3	10	0	0	0.66	0.718
	b) female	10	33	0	0	0	0		
3.	Religion								
	a) Hindu	22	73	2	7	0	0		
	b) Christian	5	17	1	3	0	0	3.721	0.714
	c) Islam	0	0	0	0	0	0		
	d) Others	0	0	0	0	0	0		
4.	Marital status								
	a) Married	24	80	3	10	0	0		
	b) Unmarried	3	10	0	0	0	0	0.069	1.00
	c) Widow	0	0	0	0	0	0		
	d) Separated	0	0	0	0	0	0		
5.	Educational status								
	a) Primary	6	20	1	3	0	0		
	b) High school	15	50	2	7	0	0		
	c) Under graduate	5	17	0	0	0	0	0.429	0.999
	d) Post graduate	1	3	1	3	0	0		
	e) Uneducated	0	0	0	0	0	0		

6.	Occupation								
	a) House wife	5	17	0	0	0	0		
	b) Coolie	13	43	0	0	0	0		
	c) Private employee	7	23	2	7	0	0	3.512	0.898
	d) Government employee	2	7	1	3	0	0		
	e) Retired	0		0	0	0	0		
7.	Monthly income								
	a) Nil	7	23	0	0	0	0		
	b) Rs3000-5000	6	20	0	0	0	0		
	c) Rs5000-8000	4	13	0	0	0	0	5.555	0.696
	d) Rs8000-10000	7	23	3	10	0	0		
	e) Above 10000	3	10	0	0	0	0		
8	Type of work								
	a) Sedentary worker	7	23	0	0	0	0	0.526	0.970
	b) Moderately worker	18	60	3	10	0	0		
	c) Heavy worker	2	7	0	0	0	0		

Table 4.D.1 present that there was no significant association between knowledge and the selected demographic variables such as age, gender, religion, marital status, educational status, occupation, income, type of work in the control group at p=0.05 level stating that the research hypothesis (H_5) is rejected.

Table 4.D.2. Association of knowledge with selected demographic variables in experimental group.

S. No	Socio demographic variable	Inadequate		Moderate		Adequate		Chi square	p-value
		f	%	f	%	f	%		
1.	Age in years								
	a) 20-30	4	13	1	3	0	0		
	b) 31-40	9	30	0	0	0	0	2.067	0.913
	c) 41-50	8	27	1	3	0	0		
	d) 51-60	7	23	0	0	0	0		
2.	Gender								
	a) Male	15	50	1	3	0	0	0.005	0.997
	b) female	13	43	1	3	0	0		
3.	Religion								
	a) Hindu	15	50	2	7	0	0		
	b) Christian	13	43	0	0	0	0	0.836	0.991
	c) Islam	0	0	0	0	0	0		
	d) Others	0	0	0	0	0	0		
4.	Marital status								
	a) Married	25	83	1	3	0	0		
	b) Unmarried	3	10	1	3	0	0	2.552	0.862
	c) Widow	0	0	0	0	0	0		
	d) Separated	0	0	0	0	0	0		
5.	Educational status								
	a) Primary	7	23	1	3	0	0		
	b) High school	14	47	0	0	0	0		
	c) Under graduate	5	17	0	0	0	0	4.059	0.851
	d) Post graduate	2	7	1	3	0	0		
	e) Uneducated	0	0	0	0	0	0		
6.	Occupation								
	a) House wife	4	13	0	0	0	0		
	b) Coolie	11	37	1	3	0	0		

	c) Private employee	12	40	1	3	0	0	0.133	1.000
	d) Government employee	1	3	0	0	0	0		
	e) Retired	0	0	0	0	0	0		
7.	Monthly income								
	a) Nil	7	23	0	0	0	0		
	b) Rs3000-5000	4	13	0		0	0		
	c) Rs5000-8000	5	17	1	3	0	0	3.3	0.914
	d) Rs8000-10000	3	10	1	3	0	0		
	e) Above 10000	9	0	0	0	0	0		
8	Type of work								
	a) Sedentary worker	9	30	1	3	0	0	0.346	0.986
	b) Moderately worker	19	63	1	3	0	0		
	c) Heavy worker	0	0	0	0	0	0		

Table 4.D.2.presents the association between the selected demographic variables such as age, gender, religion, marital status, educational status, occupation, income, type of work with pretest knowledge of adults in the experimental group which interferes that there is no association at 0.05 level. Hence, the research hypothesis (H_5) is rejected.

Table 4.D.3.Association of perception with selected socio demographic variables in control group.

S No	Socio demographic Variable	Inadequate		Moderate		Adequate		Chi square	p-value
		f	%	f	%	f	%		
1.	Age in years								
	a) 20-30	5	17	0	0	0	0		
	b) 31-40	9	30	0	0	0	0	0	1.000
	c) 41-50	11	37	0	0	0	0		
	d) 51-60	5	17	0	0	0	0		
2.	Gender								
	a) Male	20	67	0	0	0	0	0	1.000
	b) Female	10	33	0	0	0	0		
3.	Religion								
	a) Hindu	24	80	0	0	0	0		
	b) Christian	6	20	0	0	0	0	0	1.000
	c) Islam	0	0	0	0	0	0		
	d) Others	0	0	0	0	0	0		
4.	Marital status								
	a) Married	27	90	0	0	0	0		
	b) Unmarried	3	10	0	0	0	0		
	c) Widow	0	0	0	0	0	0	0	1.000
	d) Seperated	0	0	0	0	0	0		
5.	Educational status								
	a) Primary	6	20	0	0	0	0		
	b) High school	17	57	0	0	0	0		
	c) Under graduate	6	20	0	0	0	0	0	1.000
	d) Post graduate	1	3	0	0	0	0		
	e) Uneducated	0	0	0	0	0	0		
6.	Occupation								
	a) House wife	5	17	0	0	0	0		
	b) Coolie	13	43	0	0	0	0		

	c) Private employee	9	30	0	0	0	0		
	d) Government employee	3	10	0	0	0	0	0	1.000
	e) Retired	0	0	0	0	0	0		
7.	Monthly income								
	a) Nil	7	23	0	0	0	0		
	b) Rs3000-5000	6	20	0	0	0	0		
	c) Rs5000-8000	4	13	0	0	0	0	0	1.000
	d) Rs8000-10000	10	33	0	0	0	0		
	e) Above 10000	3	0	0	0	0	0		
8	Type of work								
	a) Sedentary worker	7	23	0	0	0	0		
	b) Moderately worker	21	70	0	0	0	0	0	1.000
	c) Heavy worker	2	7	0	0	0	0		

Table 4.D.3. Shows no significant association between selected demographic variable such as age, gender, religion, marital status, educational status, occupation, income, type of work with pretest perception of adults in the control group at 0.05 level stating that the research hypothesis (H_5) is rejected with regards to all variables.

Table 4.D.4. Association of perception with selected demographic variables in experimental group.

S No	Socio demographic Variable	Inadequate		Moderate		Adequate		Chi square	p-value
		f	%	f	%	f	%		
1.	Age in years								
	a) 20-30	4	13	1	3	0	0		
	b) 31-40	9	30	0	0	0	0	3.745	0.711
	c) 41-50	6	20	3	10	0	0		
	d) 51-60	7	23	0	0	0	0		
2.	Gender								
	a) Male	13	43	3	10	0	0	0.852	0.653
	b) female	13	43	1	3	0	0		
3.	Religion								
	a) Hindu	15	50	2	7	0	0		
	b) Christian	11	37	2	7	0	0	0.079	1.000
	c) Islam	0	0	0	0	0	0		
	d) Others	0	0	0	0	0	0		
4.	Marital status								
	a) Married	23	77	3	10	0	0		
	b) Unmarried	3	10	1	3	0	0		
	c) Widow	0	0	0	0	0	0	1.028	o.984
	d) Separated	0	0	0	0	0	0		
5.	Educational status								
	a) Primary	7	23	0	0	0	0		
	b) High school	13	43	2	7	0	0		
	c) Under graduate	4	13	1	3	0	0		
	d) Post graduate	2	7	1	3	0	0		
	e) Uneducated	0	0	0	0	0	0	1.484	0.993
6.	Occupation								
	a) House wife	4	13	0	0	0	0		
	b) Coolie	10	33	2	7	0	0		

	c) Private employee	11	37	2	7	0	0		
	d) Government employee	1	3	0	0	0	0	0.325	1.000
	e) Retired	0	0	0	0	0	0		
7.	Monthly income								
	a) Nil	4	13	0	0	0	0		
	b) Rs3000-5000	5	17	0	0	0	0		
	c) Rs5000-8000	6	20	1	3	0	0	1.130	0.997
	d) Rs8000-10000	4	13	1	3	0	0		
	e) Above 10000	7	23	2	7	0	0		
8	Type of work								
	a) a)Sedentary worker	I0	33	1	3	0	0	0.249	0.992s
	b) Moderately worker	11	37	3	10	0	0		
	c) Heavy worker	0	0	0	0	0	0		

Table 4.D.4.presents that there is no significant association between the pre - test perception of experimental group and the selected demographic variables such as age, gender, religion, marital status, educational status, occupation, income, type of work at p=0.05 level. Hence, research hypothesis (H_5) is rejected.

CHAPTER-V

DISCUSSION

This chapter presents the discussion part in relation to the similar studies conducted by other researchers. The main aim of the study was to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai.

The discussion was based on the objectives and Hypothesis specified in this study.

1. The first objective of this study was to assess the knowledge and perception on coronary artery disease risk factors before and after instructional module in the control and experimental group.

The above objective of the study was to identify the level of knowledge and perception on coronary artery disease risk factors before and after instructional module.

The study findings shows that, pretest knowledge in the control group revealed most of the adults had inadequate knowledge 27(90%), 3(10%) moderate knowledge and none of them had adequate knowledge.

The post test level of knowledge in the control group revealed most of the adults had inadequate knowledge 27(90%), 3(10%) moderate knowledge and none of them had adequate knowledge.

In the experimental group, 28 (93.3%) had inadequate knowledge and 2(6.66%) had moderate knowledge and none of them had adequate knowledge in the pre-test whereas in the post-test, majority 26(86.66%) of the subjects had adequate knowledge, 4 (13%) had moderately adequate knowledge and none of them had

inadequate knowledge. Hence, it is clearly seen that the knowledge has improved to 100% in the experimental group after implementing instructional module.

Regarding pre-test level of perception in the control group revealed majority of the subjects had moderate values 10(33.33%), 20(66.6%) had low values and none of the adults had high value. post-test level of perception in the control group revealed majority of the subjects had moderate values 6 (20%), 24 (80%) had low values and none of the adults had high value.

In the experimental group18 (60%) had low values, 12(40%) had moderate values and had high value and none of the adult. After the, instructional module on coronary artery disease risk factors post-test shows that highest percentage 30 (100%) of the subjects had high value.

The research hypothesis (H_1) says that there is a significant difference in the pre-test and post-test scores of knowledge and perception among control and experimental group. So the research hypothesis (H1) is accepted

This study was supported with Agarwal.VK et.al (2006), regarding prevalence of coronary artery disease risk factors among people of 30 years and above. Prevalence of smoking and tobacco use was 16%, alcohol intake 9.4%, over weight18%, obese3.2%, truncal obesity18.5%, abdominal obesity15.7% and hypertension 33.5%.Thus the study results shows that among adults patient majority 60% are at moderate risk and they need to be given education regarding CAD.

Lesiaket.al (2001) conducted a study to assess the awareness, level of knowledge and perception of cardiovascular disease in adolescent populations, they administered a survey designed to collect data on demographics variables, risk factors, importance, perceived future risks and other knowledge based assessment question about cardio vascular disease, and sample was 873 students. A minority

(16.6%) of respondent selected cardiac vascular disease as the greatest life time risk. Hence this study infers that the adolescent lacks in knowledge regarding the risk of cardiovascular disease and do not perceive themselves at risk for cardiovascular disease. After the intervention the knowledge and perception was increased.

2.The second objective of this study was to determine the effectiveness of Instructional module by comparing the pre-test and posttest knowledge and perception in the control and experimental group.

Regarding knowledge, obtained paired't' test value of experimental group was 28.57 at $p<0.001$ level, which indicates this difference is considered to be highly significant and the paired't' value of the control group was 1.162 which shows no significance.

Regarding perception, obtained paired 't' test value of experimental group was 23.34 at $p<0.001$ level, which indicates this difference is considered to be highly significant and paired 't' value of the control group was 1.56, which shows no significance.

The research hypothesis (H_2) says that the mean post-test scores of knowledge and perception is significantly higher than the pretest score of knowledge and perception in the control and experimental group**.** So the research hypothesis (H2) is accepted.

These findings also were consistent with a study by Azhar Farooqia et.al on attitude to risk factors of coronary artery disease amongst South Asians aged over 40 years. Barriers to improving lifestyle with respect to diet, exercise were identified. Participants perceived stress as an important cause of CAD.

This was supported by Mary P.A (2008) conducted a study to assess the Effectiveness of planned teaching program on prevention of coronary artery disease

among older adults in a selected rural community at Mangalore. Convenient sampling technique was used to select 30 samples. Pre-test knowledge assessment revealed that 76% of the subjects had an average knowledge. The total mean percentage of the pretest knowledge score was (60.87%) with mean and SD 18.87±3.19 and the mean posttest knowledge score was 91.70% with mean SD 28.43±1.61 significance of difference between the pretest and posttest knowledge scores was statistically listed using paired 't' test and it was found to be significant ($t=29$, $P<0.05$). It is found that planned teaching programme is very effective in improving the knowledge of older adults. This study infers that the planned teaching programme prevention of coronary artery disease is very effective in improving the knowledge of older adults.

3.The third objective of the study was to determine the effectiveness of Instructional module by comparing the post-test scores between the control and experimental group

The mean post-test knowledge score (17±1.54) in the experimental group was found to be significantly higher than the post-test knowledge score (8.26±1.554) in the control group, with the mean difference of 9.6 It shows that the instructional module on coronary artery disease risk factors was effective in the experimental group.

Regarding knowledge obtained from independent 't' test value on the control and experimental group after the instructional module on coronary artery disease risk factors was 23.06 ($p<0.001$). It indicates that the knowledge of coronary artery disease risk factors was improved after the implementation on the instructional module in experimental group.

In the control group the mean pre-test perception score was (9.8±1.57) and mean post-test perception score was (9.3±1.74), with a mean difference of 0.5.

In the experimental group the mean pre-test perception score was (9.7±2.50) and mean post-test perception score was (18.5±1.22), with a mean difference of 8.8.

The mean post-test perception score (9.3±1.74) in the experimental group was found to be significantly higher than post-test perception score (18.5±1.22) in the control group, with the mean difference of 9.2. It shows that instructional module on coronary artery disease risk factors was effective in the experimental group.

Regarding perception, obtained independent 't' value on the perception between control and experimental group after the instructional module was 23.83 ($p<0.001$), which shows high significance.

The research hypothesis (H_3) says that, the mean posttest score of knowledge and perception is significantly higher in the adults who were exposed to the instructional module than the adults who were not exposed to the instructional module. So Research Hypothesis H_3 is accepted.

This was supported with a study by Siva Nageswari K.(2009) conducted a study on role of self-instructional module in creating awareness about CAD among urban community adults. 80 samples were included. The mean score of subjects obtained for overall level of knowledge in pre-test was 30.71 and post-test 51.40. so there is significant difference in the knowledge of adults regarding risk factors of CAD before and after administration of instructional module. This study infers that the self- instructional module, which was administered by the investigator to the subjects, was effective, since the subjects had significant improvement in knowledge scores on CAD.

4.The fourth objective of this study was to find out the correlation between knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups.

The findings of this study reveal that, there was a significant correlation between the knowledge and perception in the post control group, the "r" value was 0.

The findings of this study reveal that, there was a significant correlation between the knowledge and perception in the post experimental group, the "r" value was 0.6. This study found to have relationship between knowledge and perception regarding instructional module on coronary artery disease risk factors among adult.

The research hypothesis (H_4) says that there is a significant correlation between the knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups**.** So Research Hypothesis H_4 is accepted.

These findings were supported by the study done by Rosanne Crouch (2008) regarding perception, knowledge and awareness of CAD among Australian Women 25 to 65 years of age. The results of this study found women's overall knowledge relate to positive action to minimize their own risks.

M Imanipur, H Haghani(2002) conducted cross sectional study on knowledge and performance of teachers regarding coronary artery disease prevention and its related factor in 590 teachers in 5 educational zones of Tehran were selected by multistage sampling method. Data were collected by a self-completed questionnaire in 2 parts:17 knowledge about precipitating and preventive performance in 3 domains including nutrition, exercise and smoking and some effective . Content and test-retest methods were applied to validate and made the questionnaire reliable (r=0.9) respectively Most subjects were women (68.3%) and married (89.5%) with mean age 40.36.Findings showed that the majority subjects (63%) had satisfactory knowledge

of coronary artery disease(mean=14.93 } 2.60), 74.5% had moderate performance innutrition domain while 63.4% had a weak performance in exercise, 78% had as satisfactory performance in smoking domain. This study infers that inspite of satisfactory knowledge about coronary artery disease there preventive performance was not desirable. The significant relationship was found between education level and knowledge as well as gender and preventive performance respectively.

5.The fifth objective of this study was to find out the association between the knowledge and perception among adults and their selected demographic variables in control and experimental group.

The findings of the study revealed the association between pre-test level of knowledge and perception on coronary artery disease risk factors among adults with selected demographic variables in both control and experimental groups.

The study findings shows that among adults 11(36%) and 9(30%) were between 31-40 and 41-50 years of age group in the control group and experimental group respectively. Regarding the gender, highest 20(67%) and 16(53%) of adults were males in both the control and experimental groups respectively. With regard to religion, most of the respondents were Hindu 24(80%) and 17 (57%) in control and experimental groups respectively. With regard to marital status, most of the adults were married 27(90%) and 26 (87%) in control and experimental groups respectively. With regard to educational status, 17 (57%) and 15(50%) adults have completed their higher education in the control group and in the experimental group respectively. With regard to occupation, majority of the adults were 13(43%) in the control group and 13(43%)coolie workers in the experimental group were private employee. Regarding the income, most of the adults that is earn 10(33%) in the control group were belongs to the income between Rs.8000 and Rs.10000 per month, and 9(30%) in

the experimental group belongs to the income of above Rs.10000 per month in the. With regard to type of work, majority were moderate worker 21(70%) and 20(67%) in control and experimental group respectively.

There is no association between pre-test level of knowledge and perception towards instructional module coronary artery disease risk factors among adults with selected demographic variables in both control and experimental group.

The research hypothesis (H_5) says that there is a statistically significant association between knowledge and perception scores with selected demographic variables in both control and experimental group. So the Research Hypothesis H_5 is rejected. Hence the null hypothesis is accepted.

These findings were consistent with a study conducted by Abdulla S. Assiri regarding Knowledge about coronary artery disease among patients admitted to Aseer hospital, Saudi Arabia. The findings of this study shows level of knowledge and education play a vital role in preventing the occurrence of CAD. And also the study findings showed that elderly people had low knowledge compared to those aged less than 60 years.

This was supported by Jang- horbani et.al (2006) indicated that there is a high prevalence of CAD among the Iranian type 2 patients. In a study of 10,622 consecutive patients undergoing elective coronary artery by-pass grafts (CABG) from 2001 to 2005 revealed that over one third of these patients had DM. The study infers that the patients with left main coronary artery disease were more likely to be male, older and have diabetes mellitus or dyslipidemia in Persian population. The findings of this study show that there is no association with the selected demographic variables.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

A study is said to be incomplete, if its results are not communicated effectively to its users and consumers. This chapter deals with the summary and conclusion drawn. It focuses on the implications and gives recommendation for Nursing education, Nursing practice, Nursing administration and Nursing research.

SUMMARY OF THE STUDY

The main focus of the present study was to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults in the selected villages of Madurai.

This was a quasi-experimental study in which pre-test and post-test control group design was adopted for the present study. Tool was developed and used for collecting data to assess the knowledge and perception on coronary artery disease risk factors. The reliability of the tool was established by test re-test method. The tool was administered among adults in Madurai. The reliability for knowledge was found to be 0.98 by Karl Pearson coefficient and the reliability for perception was found to be 0.78 by Cronbach's alpha. The tool was found to be reliable. The data gathered was analyzed and interpreted in terms of the study objectives.

The main study was conducted in selected villages of Madurai for a period of six weeks. The non-probability convenience sampling method was used for sampling technique procedure. Data was collected from the respondent, reorganized and interpreted using both descriptive and inferential statistics.

The objectives of the study were following:

1. To assess the knowledge and perception on coronary artery disease risk factors before and after instructional module in the control and experimental group.
2. To determine the effectiveness of Instructional module by comparing the pretest and posttest knowledge and perception in the control and experimental group.
3. To determine the effectiveness of Instructional module by comparing the posttest scores between the control and experimental groups.
4. To find out the correlation between knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups.
5. To find out the association between the knowledge and perception among adults and their selected demographic variables in control and experimental group.

The **research hypotheses** stated were,

H_1 -There is a significant difference in the pre-test and post-test scores of knowledge and perception among control and experimental group.

H_2 **-** The mean post-test scores of knowledge and perception is significantly higher than the pretest score of knowledge and perception in the control and experimental group.

H_3–The mean posttest score of knowledge and perception is significantly higher in the adults who were exposed to the instructional module than the adults who were not exposed to the instructional module.

H_4-There is a significant correlation between the knowledge and perception on coronary artery disease risk factors among adults in the control and experimental groups.

H_5 - There is a statistically significant association between knowledge and perception scores with selected demographic variables in both control and experimental group.

Major findings of the study

Regarding the control group, pre-test level of knowledge among adults shows that 90% had inadequate knowledge, 7% had moderate knowledge and 0 had adequate knowledge and regarding perception, low value 66.66% and 33.33% had moderate value and none high value. Post-test level of knowledge revealed 90% had inadequate knowledge, 7% had moderate knowledge and none had adequate knowledge and regarding perception 80% had low value, 20% had moderate value and none of them had high value. The knowledge Mean score for pre-test was 8.13 and the post-test score was 8.26, perception mean score for pre-test was 9.7 and post-test was 18.5, the paired 't' test for the level of knowledge was 1.162 and perception1.56 was 28.57, which shows there is no adequate knowledge and high perception value in the pre-test and post-test score among control group without the intervention of the instructional module on coronary artery disease risk factors.

Regarding experimental group, pre-test level of knowledge among instructional module on coronary artery disease risk factors reveals that 93.33% had inadequate knowledge, 6.66% had moderate knowledge and none had adequate knowledge and regarding perception 66.6% had high values, 40% had moderate values and none had high values regarding coronary artery disease risk factors. Post-test level of knowledge shows none had inadequate knowledge, 13.33% had moderate knowledge and 86.6% had adequate knowledge and regarding perception, 100% had high value of perception. It can be interpreted that the level of knowledge and

perception has been increased in experimental group with adequate knowledge and high values after the intervention instructional module on coronary artery disease risk factors.

Regarding the efficacy of instructional module on coronary artery disease risk factors, the mean score for post-test knowledge was higher than the pre-test knowledge. It was 8.13 in the pre-test and 8.26 in the post-test. The mean score of perception in post- test was 18.15 increased from the pre-test score 9.7. The paired‘t’ test for the level of knowledge was 28.57($p<0.001$) and perception was 23.34 ($p<0.001$), which was highly significant. The independent ‘t’ test was found In the level of knowledge was 23.6 ($p<0.001$) and the perception was 23.83 ($p<0.001$), which was statistically proven that the efficacy of instructional module on coronary artery disease risk factors is effective to increase the knowledge and perception scores among adults.

Karl Pearson coefficient was used to relate the post-test level of knowledge with the perception of coronary artery disease risk factors among adults in the experimental group. The ‘r’ value was 0.6 which shows positive relation between knowledge and perception towards. This shows the study is instructional module on coronary artery disease risk factors reliable for knowledge and perception in both control and experimental group.

Regarding association between the pre-test level of knowledge and perception in the experimental group with selected demographic variable of personal data on instructional module on coronary artery disease risk factors, there is no significant association between levels of knowledge and perception instructional module on coronary artery disease with the selected demographic variables. Thus, the findings of

this study provided an empirical evidence to prove that the prevention is a good method to improve knowledge and perception on coronary artery disease risk factors among adults.

LIMITATIONS

1. This study was limited only to assessing the knowledge and perception on coronary artery disease risk factors by questionnaire and rating scale.
2. This study was limited to the adults in the selected villages, Madurai.
3. In this study, the data was collected from a small number of samples (60).

IMPLICATIONS

The findings of the study have several implications in the following field; it can be discussed on four areas namely: Nursing education, nursing practice, Nursing administration and Nursing research.

Implications in nursing education

- This study has provided the important tool for improving the knowledge and perception on coronary artery disease risk factors through the instructional module.
- The findings help the nursing students to understand the need to be educated and to create awareness on coronary artery disease risk factors.
- It helps the nursing facilities to give more importance for planning and organizing instructional module on coronary artery disease risk factors to improve the knowledge and perception.
- Current research on coronary artery disease risk factors bestows an opportunity for nursing students about the need for awareness on coronary artery disease risk factors.

Implications in nursing practice

- The findings of the study help the nurse to create awareness among adults with the help of the instructional module implementation to the adults.
- The findings help the nursing personnel to estimate the effectiveness of instructional module on coronary artery disease risk factors.
- The nursing personnel understand the necessity of providing awareness about coronary artery disease risk factors.
- Nurses can utilize the knowledge and perception on coronary artery disease risk factors in clinical practice.

Implications in nursing administration

- ✶ The present study helps the nursing administrative authority to recognize the need for developing an appropriate education program for college students.
- ✶ Nurse as an administrator has a crucial role in planning the awareness programs imparting information to public and patients.
- ✶ Nursing administrators must see that a separate budget should be allocated for in-service education in the nursing department.
- ✶ Optimizing the knowledge and perception on coronary artery disease risk factors among adults will improve their professional knowledge as nursing world is always changing and challenging.

Implications in nursing research

- ✶ The findings of the study help to expand the scientific body of professional knowledge for further research.
- ✶ Based on this study, in deep research studies of various factors contribute for coronary artery disease risk factors among adults.
- ✶ Large scale studies can be conducted in consideration of other contributing variables.

CONCLUSION

It is imperative that nurses be able to think critically to face the challenges of today's fast paced technologically advanced nursing practice. The literature repeatedly stresses that nurse must be able to think critically in order to process complex data and make e clinical judgment of the planning, managing and evaluating of the health care of their adults.

In this study instructional module have played the mode of education to adults in selected village to create awareness regarding coronary artery disease. Pretest result shows that maximum adults had inadequate knowledge regarding coronary artery disease 28(93%). After implementation of instructional module, the adults have improved their knowledge and this they developed adequate knowledge 26(86.6%).

And regarding perception, pretest result shows that maximum adults had inadequate perception 18(60%) and after implementing the adults had adequate perception 30(100%).

This shows that instruction module has positive result in the improvement of knowledge and perception regarding coronary artery disease among adults.

RECOMMENDATION

On the basis of the findings of this study, the following recommendation has been made for further studies.

- A similar study can be undertaken with larger number of samples.
- A similar study can be conducted in other settings.
- The same study can be conducted by using different teaching methods.
- A comparative study can be conducted on coronary artery disease risk status between men and women.

- A comparative study can be conducted on knowledge and perception regarding coronary artery disease between urban and rural community.
- Experimental study can be conducted on effectiveness of protocols on prevention of coronary artery disease.

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APPENDIX-A

LETTER SEEKING EXPERTS OPINION FOR CONTENT VALIDITY

FROM

Miss. E. Ajitha
II year M.sc (N),
C.S.I. Jeyaraj Annapackiam College of Nursing and Allied Health sciences,
Pasumalai, Madurai-4.

TO

Respected sir/Madam,

Sub: Requisition for opinions and suggestions of experts for content validity of the research tool,

With due regards, I kindly bring to your valuable notice that , I am doing my post-graduation in nursing at C.S.I. Jeyaraj Annapackiam College of Nursing and Allied Health sciences, Madurai. As a part of my university requirement, I am supposed to complete a research study, for which I have selected the following topic,

"A Quasi experimental study to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai 2015".

With regards I humbly request you to spare your precious time to validate the tool with your valuable opinions and suggestions for which I have prepared. I will be grateful and thankful to you.

Thanking you,

Place :Pasumalai , Yours sincerely,

Date : (E. Ajitha)

APPENDIX-B

LETTER SEEKING PERMISSION TO CONDUCT THE PILOT STUDY

FROM

E. Ajitha,
II year M.sc (N),
C.S.I. JeyarajAnnapackiam College of Nursing and Allied Health sciences,
Pasumalai, Madurai-4.

TO

Forwarded through

The principal,
C.S.I. JeyarajAnnapackiam College of Nursing and Allied Health sciences,
Pasumalai, Madurai-4.

Respected sir/Madam,

Sub: Seeking permission to conduct the pilot study – reg.,

With due regards, I kindly bring to your valuable notice that, I am a post graduate student of C.S.I. JeyarajAnnapackiam college of Nursing And Allied sciences, Madurai. As a part of my university requirements I am supposed to complete a research study for which I have selected the following topic:

"A Quasi experimental study to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai 2015".

I Would like to do my study in your esteemed institution. So I humbly request you to give me permission to conduct the study for which I remain grateful.

Thanking you in anticipation

Place :Pasumalai , Yours sincerely

Date : (E. Ajitha)

APPENDIX-C

LETTER SEEKING PERMISSION TO CONDUCT THE RESEARCH STUDY

FROM

E. Ajitha ,

II year M.sc (N),

C.S.I. JeyarajAnnapackiam College of Nursing and Allied Health sciences,

Pasumalai, Madurai-4.

TO

Forwarded through

The principal,

C.S.I. JeyarajAnnapackiam College of Nursing and Allied Health sciences,

Pasumalai, Madurai-4.

Respected sir/Madam,

Sub: Seeking permission to conduct the research study – reg.,

With due regards, I kindly bring to your valuable notice that, I am a post graduate student of C.S.I. JeyarajAnnapackiam College of Nursing and Allied Sciences, Madurai. As a part of my requirement I am supposed to complete a research study for which I have selected the following topic:

"A Quasi experimental study to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai 2015".

I would like to do my study in your esteemed institution. So I humbly request you to give me permission to conduct the study for which I remain grateful.

Thanking you in anticipation

Place :Pasumalai , Yours sincerely,

Date : (E. Ajitha)

APPENDIX-D

CERTIFICATE OF VALIDATION

This is to certify that the tool developed by **Miss.E. Ajitha** M.Sc (N) 2nd year student of C.S.I. Jeyaraj Annapackiam College of Nursing, Pasumalai, Madurai.(Affiliated to the Tamil Nadu Dr.M.G.R. Medical University, Chennai) is validated by the undersigned, can proceed with this tool and conduct the main study for dissertation entitled,

"A Quasi experimental study to evaluate the impact of instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults at selected villages in Madurai 2015".

PLACE:

DATE:

SIGNATURE:

NAME:

DESIGNATION:

ADDRESS:

CONTENT VALIDIY CERTIFICATE

This is to certify that the tool developed by E. Ajitha IInd year M.Sc.(N) student of C.S.I Jeyaraj Annapackiam College of Nursing, Pasumalai, Madurai.(Affiliated to the Tamil Nadu Dr.M.G.R. Medical University, Chennai) is validated by the undersigned, can proceed with this tool and conduct the main study for dissertation entitled,

"A QUASI EXPERIMENTAL STUDY TO EVALUATE THE IMPACT OF INSTRUCTIONAL MODULE ON CORONARY ARTERY DISEASE RISK FACTORS IN ASSESSING KNOWLEDGE AND PERCEPTION AMONG ADULTS AT SELECTED VILLAGES IN MADURAI 2015".

PLACE:

DATE:

SIGNATURE:

NAME:

DESIGNATION:

ADDRESS:

APPENDIX - E

LIST OF EXPERTS FOR CONTENT VALIDITY OF THE TOOL

1. **Dr.S. SHANTHA,M.B.B.S.,.**
   Medical officier,
   PCC Health Centre,
   Pasumalai.

2. **Dr. Suji, MBBS.,**
   Govt Hospital,
   Padathal mudu.

3. **Dr.Mrs. Sree Sandhya, MBBS.,**
   Professor
   Govt. Medical college
   Asaripalam

4. **Dr.K. Jaikishore, MBBS.,**
   Assistant surgeon(general),
   Govt. Hospita,l
   Kulasekharam.

5. **Mrs. Jasmine parimala MSc(N).,PhD.,**
   Principal,
   C.S.I. Eliza Caldwell College of Nursing,
   Idaiyangudi

6. **Mrs. R Suja rani MSc(N).,**
   Professor,
   C.S.I. Eliza Caldwell College of Nursing,
   Idaiyangudi

7. **Prof.Shanthi,M.Sc(N).(Ph.D).,**
   H.O.D of Maternal Health Nursing Department,
   C.S.I Jeyaraj Annapackiam College of Nursing and Allied Sciences,
   Pasumalai,
   Madurai-4.

8. **Prof.Dr.Mrs.Jessie Metilda,M.Sc(N)., Ph.D.,**
   H.O.D of Child Health Nursing Department,
   C.S.I. Jeyaraj Annapackiam Ccollege of Nursing and Allied Sciences,
   Pasumalai,
   Madurai-4.

9. **Prof.Dr.Mrs.JancyRachel,M.Sc(N)., Ph.D.,**
   H.O.D of Mental Health Nursing Department,
   C.S.I.Jeyaraj Annapackiam College of Nursing, Pasumalai, Madurai-4.

10. **Prof.Dr.Mr.JohnSamArunPrabhu .Y.,M.Sc(N).,Ph.D.,**
    H.O.D of Community Health Nursing Department.
    C.S.I.Jeyaraj Annapackiam College of Nursing and Allied Sciences,
    Pasumalai, Madurai-4.

11. **Mrs.AnbuRoseline,M.Sc(N).,(Ph.D).,**
    Assisstant Professor in Medical Surgical Nursing Departement,
    C.S.I. Jeyaraj Annapackiam Collegeof Nursing and Allied Sciences,
    Pasumalai,
    Madurai-4.

    Mrs.JeyaJothi.P.,M.Sc(N).,
    Assisstant Professor in Medical Surgical Nursing,
    C.S.I.Jeyaraj Annapackiam college of Nursing and Allied Sciences,
    Pasumalai,
    Madurai-4.

12. **Mrs. Dhana Priya.G.M.Sc(N).,**
    Lecturer in Medical and Surgical Nursing Department,,
    Apollo College of Nursing Madurai-4

APPENDIX-F

TOOL ON CORONARY ARTERY DISEASE RISK FACTORS

PART I

SECTION-A: DEMOGRAPHIC VARIABLE

This section seeks information regarding the selected factors to you. Kindly read all questions carefully and write the right option in the given box. Your answers will be kept confidential.

1. Age in years
   a) 20-30
   b) 31-40
   c) 41-50
   d) 51-60

2. Gender
   a) Male
   b) Female

3. Religion
   a) Hindu
   b) Christian
   c) Muslim
   d) Others

4. Marital status
   a) Married
   b) Unmarried
   c) Widow
   d) Separated

5. Educational status
   a) Primary
   b) High school
   c) Under graduate
   d) Post graduate
   e) Uneducated

6. Occupation
    a) House wife
    b) Coolie
    c) Private employee
    d) Government employee
    e) Retired

7. Monthly income
    a) Nil
    b) 3000-5000
    c) 5000-8000
    d) Above 10000

8. Type of work
    a) Sedentary worker
    b) Moderately worker
    c) Heavy worker

PART-II

SECTION-B STRUCTURED QUESTIONNAIRE ON KNOWLEDGE REGARDING MANAGEMENT OF THE RISK FACTORS OF CORONARY ARTERY DISEASE

Instruction: Read the following questions carefully and mark the right answer in the given box. There is only one correct answer. Your answers will be kept confidential.

1. Which age group of people usually has coronary artery disease?

a) Older than 45 (men) or 55 (women).
b) Older than 45 (women) or 55 (men).
c) Older than 50 (men and women).

2. Which sex is more prone to get coronary artery disease?

a) Male
b) Female
c) Both female and male

3. Which lifestyle factor has the greatest impact on getting coronary artery disease?

a) Obesity
b) High blood pressure
c) Inactive lifestyle
d) Smoking

4. Which of the following is a modifiable risk factor?

a) Obesity.
b) Heredity.
c) Gender.
d) Age

5. What is the effect of smoking on blood vessels?

a) Decreases heart rate
b) Narrows the lumen of the blood vessel
c) Dilates the blood vessel
d) Decreases blood pressure

6. How does excessive intake of alcohol lead to Coronary artery disease?

a) It improves the heart function
b) Increases the blood circulation
c) Narrow's the blood vessels of the heart
d) Dilates the blood vessels of the hearty

7. Which among the following can help to prevent risk factors of coronary artery disease?

a) Fried foods
b) Healthy life style
c) Intake of alcohol

8. Which of the following is the better way of weight reduction?

a) Strict dieting
b) Heavy exercises
c) Combination of prescribed diet and exercises
d) Taking fast foods

9. How does the exercise reduce the risk of coronary artery disease?

a) Exercise will help in increased the amount of blood
b) Exercise will avoid the excess accumulation of fat in the body
c) Exercise will increase the workload of the heart
d) Exercise will increase the body weight

10. Which type of diet can cause obesity?

a) High fat food items, like fried food, ghee, butter
b) Green leaves and vegetables
c) Fruits
d) Pulses

11. Which age People should have checked their cholesterol level?

a) Every year starting at age 35.
b) Every year starting at age 50.
c) Every five years starting at age 35.
d) Every year starting at age 20.

12. Which type of cholesterol will increase in coronary artery diseases?

a) High density lipoprotein
b) Triglycerides
c) Low density lipoprotein
d) High density and low density lipoprotein

13. Which type of cholesterol is called bad cholesterol?

a) High density lipoprotein
b) Low density lipoprotein
c) Triglycerides
d) Don't know

14. Which range of blood pressure value is a risk factor for coronary artery disease?

a) 120/80 mmHg
b) 150/100mmHg
c) 130/80mmHg
d) 110/ 70mmHg

15. How do you maintain the risk factors of coronary artery disease in terms of increased glucose with in normal limit?

a) Take prescribed drug
b) Follow dietary instruction
c) Exercise regularly
d) Monitor blood and urine sugar

16. What are the risk factors of obesity?

a) Hypertension
b) Urinary problem
c) Respiratory problem
d) All the above

17. What are the contributing risk factors for coronary artery disease?

a) Use of illicit drugs (cocaine)
b) Human behaviors
c) Sleeping pattern
d) Family type

18. How many hours of watching TV can be risk factors for older clients?

a) 1-2 hours
b) 2-4 hourss
c) 30-45min
d) < 30 min

19. How the biochemical risk factors for Coronary artery disease can be determined?

a) History collection
b) Laboratory findings
c) Physical examination
d) Scanning procedure

20. Which vitamins deficiency can be a risk factor for coronary artery disease?

a) Vitamin A
b) Vitamin D
c) Vitamin B
d) Vitamin E

PART III

PERCEPTION ON CORONARY ARTERY DISEASE RISK FACTORS

INSTRUCTIONS: Read the following statements carefully put (*) in the given space.

S.No	Content	Agree	Uncertain	Disagree
1.	I think that coronary artery disease is a communicable disease.			
2.	I feel that males are more prone for coronary artery disease.			
3.	I think alcohol; smoking will increase the risk of coronary artery disease.			
4.	I consider tobacco chewing can helps to reduce the risk of coronary artery disease.			
5.	I feel that regular exercise can helps to prevent the occurrence of coronary artery.			
6.	I think persons with coronary artery disease need to take a low fat diet.			
7.	I consider dietary fiber will increase cholesterol levels.			
8.	I feel that taking fired and fast food will reduce the body weight.			
9.	I think regular medications are not essential to control the coronary artery disease.			
10.	I feel that annual health checkup is very essential to reduce the risk of coronary artery disease.			

நேர்காணலுக்கான படிவம்

பகுதி-1

இப்பகுதிகளின் தேர்ந்தெடுக்கப்பட்ட தனிப்பட்ட தகவல்களை உள்ளடக்கியது.அனைத்து கேள்விகளையும் கவனமாக வாசித்த பின்னர் சரியான பதிலின் நேராக கொடுக்கப்படடுள்ள பெட்டியில் சரி(√) இடவும். தங்களின் தகவல்கள் வெளிப்படுத்த பட மாட்டாது.

தனிநபர் விபரம்

1) வயது

அ) 30- 40

ஆ) 41- 50

இ) 51- 60

ஈ) 60-70

2) பாலினம்

அ) ஆண்

ஆ) பெண்

3) மதம்

அ) இந்து

ஆ) கிறிஸ்தவம்

இ) இஸ்லாமியம்

ஈ) மற்றவை

4) திருமணம்

அ) திருமணமாணவர்

ஆ) திருமணமாகதவர்

இ) விதவை

ஈ) துணையை பிரிந்தவர்

5) கல்வி நிலை

அ) ஆரம்ப நிலை

ஆ) உயர்நிலை கல்வி

இ) பட்டதாரி

ஈ) பட்ட மேற்படிப்பு

உ) படிக்கதாவர்

6) தொழில்

அ) இல்லதரசி

ஆ) கூலி

இ) தனியார் வேலை

ஈ) அரசாங்க வேலை

உ) வேலையிலிருந்து ஓய்வு பெற்றவர்

7) மாத வருமானம்

அ) இல்லை

ஆ) 3000- 5000

இ) 5000-8000

ஈ) 8000-10000

உ) 10000 த்திற்கும் அதிகமாக

8) வேலையின் வகை

அ) மெதுவான வேலை

ஆ) மிதமான வேலை

இ) அதிக பளுவான வேலை

பகுதி-2

இதய இரத்த குழாய் வருவதற்கான காரணங்கள்.

குறிப்பு : இப்பகுதிகளின் தேர்ந்தெடுக்கப்பட்ட வினாகக்ளை கவனமாக வாசித்த பின்னர் சரியான பதிலின் நேராக கொடுக்கப்படடுள்ள பெட்டியில் சரி(√) இடவும்.

1) எந்தவயதினருக்குஇதய இரத்த குழாய் நோய்வருகிறது?

அ) 45 வயது பெண் (அ) 55 வயது பெண்

ஆ) 45 வயது பெண்(அ) 55 வயது ஆண்

இ) 50 வயது ஆண் மற்றும் பெண்

ஈ) 60 வயது ஆண் மற்றும் பெண்

2) எந்த மாதிரியான நபர்களுக்கு இதய இரத்த குழாய் நோய் ஏற்படுகிறது?

அ) ஆண்

ஆ) பெண்

இ) இருபாலருக்குமே

ஈ) திருநங்கை

3) எந்த மாதிரியான வாழ்க்கை முறையினால் இதய இரத்த குழாய் நோய் ஏற்படுகிறது?

அ) உடல் பருமன்

ஆ) உயர் ரத்த அழுத்தம்

இ) ஒழுங்கான செயல்பாடு இல்லாத வாழ்க்கை முறை

ஈ) புகைப்பிடித்தல்

4) பின்வருவனவற்றுள் அபாய அறிகுறிகள் எவை?

அ) உடல் பருமனாதல்

ஆ) பரம்பரை

இ) பாலினம்

ஈ) வயது

5) புகைப்பிடிப்பதால் இரத்த குழாயில் ஏற்படும் பாதிப்பு என்ன?

அ) குறைந்த அளவு இருதய துடிப்பு

ஆ) இரத்தகுழாய் வளைவாக இருத்தல்

இ) இரத்தக்குழாய் விரிவாதல்

ஈ) இரத்த அழுத்தம் குறைதல்

6) அதிக அளவு ஆல்கஹால் எடுப்பதால் இதய இரத்த குழாய் எப்படி ஏற்படுகிறது?

அ) இருதய வேலையை மேம்படுத்துகிறது

ஆ) இரத்தஓட்டம் அதிகரிக்கிறது

இ) இருதயத்திற்குச் செல்லும் இரத்தகுழாய் வளைந்து இருத்தல்

ஈ)இருதயத்திற்குச் செல்லும் இரத்தகுழாய் விரிவாக இருத்தல்

7) இதய இரத்த குழாய்க்கான அபாய அறிகுறிகளை தடுக்கும் முறைகள் எவை?

அ) வறுத்த உணவுகள்

ஆ) நோயற்ற வாழ்க்கை முறை

இ) ஆல்கஹால் எடுத்தல்

ஈ) புகைப்பழக்கம்

8) பின்வருவனவற்றுள் எவை எடை குறைதலுக்கு உதவுகிறது?

அ) உணவுக்கட்டுப்பாடு

ஆ) உடற்பயிற்சி

இ) உடற்பயிற்சி மற்றும் உணவுப்பழக்கம்

ஈ) துரித உணவு

9) உடற்பயிற்சியானது எவ்வாறு இருதய தமனி நோயை குறைக்கின்றது?

அ) உடற்பயிற்சியால் இரத்தஓட்டம் அதிகரிக்கும்

ஆ) உடற்பயிற்சியால் உடலில் அதிக அளவு கொழுப்பு சேர்வதை தடுக்கிறது.

இ) உடற்பயிற்சியினாது இருதயத்திற்கு அதிகளவு வேலையை கொடுக்கிறது.

ஈ) உடற்பயிற்சியினால் உடல் எடை அதிகரிக்கும்

10) உடல் பருமனாவதற்கான உணவு காரணிகள் எவை?

அ) கொழுப்புநிறைந்த உணவு, பொரித்த உணவு, நெய், வெண்ணெய்

ஆ) பச்சை காய்கறிகள், கீரைகள்

இ) பழங்கள்

ஈ) பருப்புவகைகள்

11) எந்த வயதினருக்கு கொழுப்பு அளவு பரிசோதிக்கப்படுகிறது?

அ) 35 வயது ஆரம்பிக்கும் போது

ஆ) 50 வயது ஆரம்பிக்கும்போது

இ) 35 வயது ஆரம்பித்த 5வருடத்திற்கு

ஈ) 45 வயது ஆரம்பிக்கும்போது

12) எந்த வகையான கொழுப்பின் அளவு அதிகரித்தால் இதய இரத்த குழாய் ஏற்படுகிறது?

அ) அதிக அளவு புரோட்டீன்

ஆ)டிரைகிளிசரைட்ஸ்

இ)குறைந்த அளவு புரோட்டீன்

ஈ) அதிக மற்றும் குறைந்த அளவு லிப்போபுரோட்டீன்

13) எந்த வகையான கொழுப்பு கெட்ட கொழுப்பு என்று அழைக்கப்படுகிறது?

அ) அதிக அளவு புரோட்டீன்

ஆ) குறைந்த அளவு புரோட்டீன்

இ) டிரைகிளிசரைட்ஸ்

ஈ) தெரியாது.

14) எந்த இரத்த அளவு இதய இரத்த குழாய் நோயை அபாய அறிகுறிகள் ஆகும்?

அ) 120/80

ஆ) 150/100

இ) 130/80

ஈ) 110/70

15) குளுக்கோஸின் அளவு சரியாக இருப்பதை விட அதிகமாக இருந்தால் இதய இரத்த குழாய் நோயை எப்படி சீர்ப்படுத்த வேண்டும்?

அ) வரையறுக்கப்பட்ட மருந்து எடுத்தல்

ஆ) உணவு பழக்கவழக்கத்தை பின்பற்றுதல்

இ) தினமும் உடற்ப்யிற்சி செய்தல்

ஈ) குளுக்கோஸ் அளவை இரத்தம் மற்றும் சிறுநீரில் பார்த்தல்

16) உடல்பருமானாக இருப்பதால் ஏற்படும் அபாய அறிகுறிகள் எவை?

அ) உயர் ரத்த அழுத்தம்

ஆ) சிறுநீரகப் பிரச்சனை

இ) மூச்சுவிடுதலில் பிரச்சனை

ஈ) மேலே கூறிய அனைத்தும்

17) எந்த அபாய அறிகுறியினால் இதய இரத்த குழாய் ஏற்படலாம் என்று கூறலாம்?

அ) கோகைன் போன்ற மருந்து எடுத்தல்

ஆ) மனித நடவடிக்கை

இ) தூக்கநிலைமை

ஈ) குடும்ப சூழ்நிலை

18) எவ்வளவு நேரம் டிவி பார்ப்பது வயதானவர்களுக்கு உகந்தது அல்ல?

அ) 1-2 மணி நேரம்

ஆ) 2-4மணி நேரம்

இ) 30- 45 நிமிடம்

ஈ) 30த்திற்கும் குறைவாக

19) எவ்வாறு இதய இரத்த குழாய் நோயின் அபாய அறிகுறிகளை வரையறுக்கலாம்?

அ) நோயாளி பற்றிய விபரம்

ஆ) ஆய்வுக்கூட பரிசோதனை

இ) உடல் பரிசோதனை

ஈ) ஸ்கேனிங் முறை

20) எந்த வைட்டமின் குறைவினால் இதய இரத்த குழாய்க்கான அபாய அறிகுறிகள் ஏற்படுகிறது?

அ) வைட்டமின் A

ஆ) வைட்டமின் D

இ) வைட்டமின் B

ஈ) வைட்டமின் E

பகுதி- III

இருதய இரத்தகுழாய் நோய்க்கான காரணங்களுக்கான கூற்றுகள்

கீழ் கோடுக்கப்பட்டுள்ள கூற்றுகளை கவனமாக வாசித்த பின்னர் சரியான பதிலை சரி (√) இடவும்.

வரிசை எண்	இதய இரத்தகுழாய்நோய் கூற்றுகள்	ஆம்	தெரியவில்லை	இல்லை
1	நான் நினைக்கிறேன் இதய இரத்தகுழாய் நோய் ஒரு தொற்று நோய்			
2	ஆண்கள் இதய இரத்தகுழாய் நோயினால் அதிகம் பாதிப்படைகிறார்கள் என்று கருதுகிறேன்			
3	மதுப்பழக்கம், புகைப்பழக்கம் உடையவர்கள் இதய இரத்தகுழாய் வருவதற்கான காரணிகளால் அதிகமாக பாதிக்கப்படுகின்றனர் என் நினைகிறேன்.			
4	புகையிலை இதய இரத்தகுழாய் வருவதற்கான காரணியை குறைக்கிறது என நினைக்கிறேன்			
5	தாடர்ச்சியான உடற்பயிற்சி தய இரத்தகுழாய் வராமல் ாதுகாக்கின்றது என ருதுகிறேன்.			

6	இதய இரத்தகுழாய் பாதிக்கப்பட்டவர்கள் கொழுப்பு குறைவான உணவுகளை எடுத்துக்கொள்ள வேண்டும் என நினைக்கிறேன்.			
7	நார்ச்சத்துக்கள் உணவுப் பொருட்கள் கொழுப்பின் அளவை அதிகரிக்கிறது என கருதுகிறேன்.			
8	எண்ணையில் பொரித்த மற்றும் சீக்கிரமாக சமைக்கும் உணவுப் பொருட்கள் உடலின் எடையைக் குறைக்கிறது என நினைக்கிறேன்.			
9	இதய இரத்தகுழாய் கட்டுப்படுத்த தொடர்ந்து மருந்து மாத்திரைகளை உட்கொள்ள தேவையில்லை என நினைக்கிறேன்			
10	இதய இரத்தகுழாய் வருவதற்கான காரணிகளை குறைக்க வருடந்தோறும் நலப் பரிசோதனை மிகவும் அவசியம். என நினைக்கிறேன்			

APPENDIX-G

SCORING KEY

KNOWLEDGE QUESTIONNAIRE

Q.NO	ANSWER	SCORE
1.	A	1
2.	A	1
3.	C	1
4.	A	1
5.	B	1
6.	C	1
7.	B	1
8.	C	1
9.	B	1
10.	A	1
11.	A	1
12.	D	1
13.	B	1
14	C	1
15.	B	1
16.	A	1
17.	A	1
18.	B	1
19.	B	1
20	C	1

SCORING KEY

PERCEPTION STATEMENTS

S.NO	AGREE	UNCERTAIN	DISAGREE
1.	0	1	2
2.	2	1	0
3.	2	1	0
4.	0	1	2
5.	2	1	0
6.	2	1	0
7.	0	1	2
8.	0	1	2
9.	0	1	2
10.	2	1	0

APPENDIX H

CORONARY ARTERY DISEASE RISK FACTORS

Teacher name	: Ms.E. Ajitha
Subject	: Medical Surgical Nursing
Topic	: Coronary artery disease risk factors
Group	: Adults
Duration	: 1 hour
Method of teaching	: Lecture cum discussion
AV Aids	: Information booklet

CENTRAL OBJECTIVES

At the end of the teaching, the adults will be able to gain in- depth knowledge on coronary artery disease risk factors.

CONTRIBUTING OBJECTIVES

At the end of the teaching the participants will be able to,

- Define coronary artery disease.
- List out the risk factors of coronary artery disease.
- Point out the signs and symptoms of coronary artery disease
- Find the diagnostic findings
- Describe the prevention of coronary artery disease

TIME	SPECIFIC OBJECTIVES	SUBJECT MATTER	TEACHING/ LEARNING OBJECTIVES	EVALUATION
3min		**INTRODUCTION** Today among all the chronic illnesses, CAD is one of the major illnesses to be paid attention to as the incidence and prevalence is increasing. A report from WHO study group (2011) stated that cardiovascular diseases are the world's largest killers, claiming17.1 million lives a year. By 2030, almost 23.6 million people will die from CVDs mainly from heart disease and stroke.		
3min	The group will define coronary artery disease	**CORONARY ARTERY DISEASE** In coronary artery disease the coronary arteries become narrowed or blocked by gradual buildup of fat within the arterial wall which decreases blood flow to the heart muscles.	Discussion and listening	Define coronary artery disease?
3min	list out the risk factors of coronary artery disease	**RISK FACTORS** ✓ NON MODIFIABLE RISK FACTORS ✓ Family history of coronary artery disease. ✓ Increasing age (>45 for males and >55 for females) ✓ Gender(more often in men than premenopausal women MODIFIABLE RISK FACTORS ✓ High blood cholesterol ✓ Cigarette smoking ✓ Tobacco use ✓ Alcoholism ✓ Hypertension ✓ Diabetic mellitus	Observing and questioning	What are all the risk factors of coronary artery disease?

3min 2min 5min		✓ Lack of estrogen in women ✓ Physical activity ✓ Obesity NON MODIFIABLE RISK FACTORS **Age** The risks for coronary artery disease increase with age. About 85% of people who die from heart disease are over the age of 65. **Gender** Men have a greater risk for coronary artery disease and are more likely to have heart attacks earlier in life than women. Women's risk for heart disease increases after menopause, and they are more likely to have angina than men. **Genetic Factors and Family History** Certain genetic factors increase the likelihood of developing important risk factors, such as diabetes and high blood pressure. For example, one genetic variant called Apo lipoprotein E4 (ApoE4) affects cholesterol levels, particularly those associated with heart disease. Heart disease tends to run in families. People whose parents or siblings developed heart disease at a younger age are more likely to develop it themselves	Listening and questioning	What are the diagnostic studies of coronary artery disease?

		MODIFIABLE RISK FACTORS **High Cholesterol** High LDL (bad) cholesterol and low HDL (good) cholesterol are factors that can indicate a serious risk for CAD. High LDL and low HDL increase your risk of building up plaque in your arteries. If you have trouble keeping straight which kind of cholesterol is good and which is bad, the National Heart, Lung, and Blood Institute suggests a nifty way to remember: When you hear the "L" in LDL, think "lousy" and "lower." When you hear the "H" in HDL, think "healthy" and "higher." Your LDL reading should be less than 100 milligrams of cholesterol per deciliter of blood (mg/dL). Your HDL cholesterol level should be at least 40 mg/dL. You should also keep an eye on your triglycerides, a type of fat circulating in your blood. Your triglyceride level should stay below 150 mg/dL. The amount of triglyceride is related to sugar intake. You can reduce your triglycerides by reducing your intake of sugary substances. **Diabetes** Diabetes is a condition in which there is too much glucose in your blood because your body can't use insulin properly or can't make enough insulin. Type 2 diabetes is often accompanied by other risk factors for CAD, primarily obesity. Your fasting blood glucose should be less than 100 mg/dL, and your HbA1c, an average measure of blood glucose control over a period of three months, should be less than seven percent. Any higher on either count and you	Listening listening	

5min 2min		run a greater risk of CAD. If you have diabetes, talk to your doctor and follow his or her instructions for keeping your blood sugar under control. **High Blood Pressure (Hypertension)** Blood pressure is a measurement of how much resistance the vessels offer as your heart pumps blood through them. Over time, high blood pressure can cause the coronary arteries to narrow and stiffen. Your blood pressure should remain consistently at or below 120/80 mmHg. **Overweight or Obesity** The terms “overweight” and “obese” are more than unflattering adjectives; they’re medical diagnoses. Being overweight or obese increases CAD risk dramatically. Furthermore, carrying too much weight often goes hand in hand with high blood pressure or diabetes, and it’s directly related to poor diet and physical activity habits. Overweight and obesity are usually defined in terms of body mass index (BMI). Your BMI, a measure of weight to height, should stay between 18.5 and 24.9. A BMI of 25 or greater, especially if you carry your weight around your midsection, increases CAD risk. Women and men should have a waist circumference of no more than 35 and 40 inches, respectively. Catching a glimpse of yourself stepping out of the shower is all you probably need to determine whether you're too chunky, but you should know your BMI. Use an online BMI tool or ask your healthcare provider to calculate the number for	Listening , observing and questioning	

		you. **Physical Inactivity** Exercise helps lower your risk of CAD by lowering blood pressure, raising HDL cholesterol, and strengthening your heart so it works more efficiently. It also helps you maintain a healthy weight and reduces your risk for other diseases (such as obesity and diabetes) that might lead to CAD. **Alcohol** Moderate alcohol consumption (one or two drinks a day; 5 ounces wine, 12 ounces beer, or 1.5 ounces hard liquor is one drink) can help boost HDL "good" cholesterol levels. Alcohol may also prevent blood clots and inflammation. By contrast, heavy drinking harms the heart. In fact, heart disease is the leading cause of death in alcoholics. **Tobacco smoke** Smokers' risk of developing coronary heart disease is much higher than that of nonsmokers. Cigarette smoking is a powerful independent risk factor for sudden cardiac death in patients with coronary heart disease. Cigarette smoking also acts with other risk factors to greatly increase the risk for coronary heart disease. People who smoke cigars or pipes seem to have a higher risk of death from coronary heart disease (and possibly stroke) but their risk isn't as great as cigarette smokers'. Exposure to other people's smoke increases the risk of heart disease even for nonsmokers.		

	Point out the signs and symptoms coronary artery disease. Find out the diagnostic studies	**SIGNS AND SYMPTOMS** ✓ Pain in the chest behind the upper or middle third of the sternum and may radiate to the jaw, shoulders and inner aspects of the upper arm usually the left arm. ✓ Tightness or chocking sensation ✓ Numbness in the arm ✓ Shortness of breath ✓ Pallor ✓ Diaphoresis ✓ Dizziness ✓ Light headedness ✓ Nausea ✓ Vomiting **DIAGNOSTIC EVALUATION** ✓ History collection ✓ Physical examination ✓ ECG ✓ Echocardiogram ✓ Nuclear scan ✓ Cardiac catheterization ✓ Coronary artery angiography **MANAGEMENT**	Discussion and listening	

	Describe the management of coronary artery disease.	✓ Medications ✓ Angioplasty ✓ Cardio pulmonary bypass graft. **PREVENTION** **Dietary measures** **Foods to be taken** ✓ All green leafy vegetables ✓ Fresh fruits ✓ Cereal grains ✓ Legumens **Foods to be avoided** Fat rich diet like ✓ Fried chicken, Mutton, Egg yolk, Fried fish ✓ Curd ✓ Ghee ✓ Vanaspathi ✓ Coconut oil ✓ Tinned foods **Exercises** ✓ Regular, moderate physical activity decreases cholesterol levels. ✓ The goal for the average person is a total of 30 minutes of exercise, 3-4 times per week. ✓ Instruct the patients to stop any activity if they develop chest pain, unusual shortness of breath, dizziness, light headedness,	Discussion and listening	

		nausea. ✓ Walking daily, increasing distance and time as prescribed. ✓ Avoiding activities that tense muscles: isometric exercises, weight lifting and any activity that requires sudden burst of energy ✓ Avoiding physical exercise immediately after a meal. ✓ Alternating activity with rest periods. **Promoting cessation of tobacco use** ✓ Cigarette smoking contributes to the development and severity of CAD. ✓ Tobacco causes detrimental vascular response and increases platelet adhesion, leading to a higher probability of thrombus formation. ✓ Cessation of tobacco use results in a lower rate of cardiac events. **Promoting cessation of alcohol** ✓ Instruct the patient to avoid intake of alcohol because it will ✓ increase the incidence of CAD and increase the body weight. **Managing Hypertension** ✓ Hypertension can increase the work load of the heart. ✓ Instruct the patients to avoid salt rich foods like, ✓ Pickle ✓ Bakery items ✓ Chips ✓ Dry fish	Discussion and listening	

		✓ Fast food **Controlling Diabetic Mellitus** ✓ Hyperglycemia increases platelet aggregation and altered blood cell function which can lead to thrombus formation. ✓ Instruct the patients to avoid tubers, fruits like mango, jackfruit, banana, grapes, custard apple, and chiku dry fruits like dates, dry grapes and fruit juices. ✓ Instruct the patients to take fenugreek, green leafy vegetables, fiber rich foods small and freqeuent foods. ✓ Instruct the patient to do the exercises three days per week at the same. **Managing stress** ✓ Stress will increase the incidence the incidence of CAD. ✓ So instruct the patient to undergone the relaxation techniques like, ✓ Watching television ✓ Reading books ✓ Gardening ✓ Hearing music ✓ Meditation **DO'S and DON'T'S** ✓ Avoiding any activity that produces chest pain, extreme dyspnea or undue fatigue. ✓ Avoiding extremes of heat and cold and walking against the wind.		

	Enumerate the complications of coronary artery disease	✓ Losing weight, if indicated. ✓ Stopping smoking and use of tobacco; avoid second hand smoke ✓ Developing heart- healthy eating patterns and avoiding large meals and hurrying while eating. ✓ Eat a diet in saturated fat, high in fiber, and if indicated lower in calories ✓ Carry nitroglycerin at all times. ✓ Avoid using medications or any over the counter substances without discussing with a health care provider. **COMPLICATIONS** ✓ Acute pulmonary edema ✓ Heart failure ✓ Cardiogenic shock ✓ Dysrhythmias and cardiac arrest ✓ Myocardial rupture		

APPENDIX –I

CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL

Respected madam/sir,

Kindly go through the demographic variables, knowledge questionnaire, and perception statements. Please give your valuable suggestions regarding accuracy, relevancy and appropriateness of the content. If there is any suggestions or comments please mention in the remarks column.

PART:I DEMOGRAPHIC VARIABLES

ITEM NO	ACCEPTED	NOT ACCEPTED	REMARKS OR SUGGESTION
1			
2			
3			
4			
5			
6			
7			

Any other suggestion:

PART II: STRUCTURED KNOWLEDGE QUESTIONNARIE

Q.NO	ACCEPTED	NOT ACCEPTED	REMARKS OR SUGGESTION
1.			
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PART III: PERCEPTION STATEMENTS ON CORONARY ARTERY DISEASE RISK FACTORS

Q.NO	ACCEPTED	NOT ACCEPTED	REMARKS
1.			
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APPENDIX-J